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A CATALOG OF PATENTED MOTHPROOFING MATERIALS AND
SOLVENTS AND ADJUVANTS USED WITH THEM

By

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R. C. Roark, C. V. Bowen, and R. L. Busbey

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Division of Insecticide Investigations //

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A CATALOG OF PATENTED MOTHPROOFING MATERIALS AND
SOLVENTS AND ADJUVANTS USED WITH THEM

By

R. C. Roark, C. V. Bowen and R. L. Busbey,
Division of Insecticide Investigations

Introduction

This catalog includes all substances mentioned in the three indexes of patented mothproofing materials (Roark, 29, 30; Roark and Busbey, 31), also those mentioned in a fourth (unpublished) index. The information in this catalog has been compiled from 437 foreign and domestic patents and is complete through 1939. In addition to the information taken from these patents, compounds referred to in 42 publications on mothproofing are included.

Mothproofing materials are defined as agents which impart to wool and other keratin-containing products such as hair and feathers the ability to withstand damage or destruction by clothes moths, carpet beetles and other fabric pests. Examples are soluble fluosilicates and many diphenyl- and triphenyl-methane derivatives. Compounds such as naphthalene, paradichlorobenzene and ethylene dichloride are used as fumigants to kill fabric pests in enclosed spaces but as they are volatile their effect is not persistent and they are not classed as mothproofing agents. However, they have been included in this catalog because they are frequently mentioned in mothproofing patents.

Lists of mothproofing materials are valuable not only because of the information they give on compounds suitable for impregnating wool, but also because they suggest materials worthy of trial as dusts and sprays for

combating insects injurious to growing plants. A striking example of a mothproofing compound that is also a potent agricultural insecticide is DDT. Originally tested for mothproofing value, which it was found to possess in high degree, it was also found to be very toxic to the Colorado potato beetle. This finding led to its being tried against a wide range of insects that attack man, domestic animals and growing plants with results that are well known.

In preparing this catalog the names of the compounds have been changed to agree with the system of nomenclature employed in the latest annual index to Chemical Abstracts and these revised names are arranged alphabetically.

ABIETIC ACID

Woolen rugs may be protected from attack by carpet beetles by spraying with a 5-percent solution of titanium abietate. Other rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, and thallium) of abietic acid may be similarly employed.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

ABSINTHIN

Ger. 488,307.

ACETAL, DICHLORO-

U. S. 2,129,025.

ACETALDEHYDE

Condensation products of acetaldehyde with p-halogenated phenols or their derivatives are used to protect textiles against Anthrenus vorax, Dermestes spp., and other pests.-Brit. 316,900; Fr. 651,646.

ACETALDEHYDE, ADDITION COMPOUND OF, WITH MAGNESIUM BROMIDE

The addition compound of acetaldehyde with anhydrous magnesium bromide is decomposed by water and gives off toxic vapor used to fumigate verminous clothing.-Brit. 426,398.

ACETALDEHYDE, CHLORO-

Monochloro- and dichloro-acetaldehyde and monochloroacetaldehyde hydrate are mentioned as known insecticides.-U. S. 2,129,025.

ACETALDEHYDE PHENYLCARBOXYLIC ACID ETHYL ESTER HYDRAZONE

Brit. 238,287; Fr. 581,037; U. S. 1,562,510.

ACETALDEHYDE PHENYLHYDRAZONE

Brit. 238,287; Ger. 402,341.

ACETALS, HALOGENATED

These are effective against various insects including clothes moths.-

U. S. 2,129,025.

ACETAMIDE

Ineffective.-Jackson and Wassell (18).

ACETAMIDE, alpha-DODECYLAMINO-N-ETHYL-

U. S. 2,139,190.

ACETANILIDE

ACETANILIDE, CHLORO-

Ineffective in concentrations up to 2 percent in acetone.-Minaeff and Wright (23).

ACETANILIDE, alpha-DODECYLAMINODIMETHYL-

U. S. 2,139,190.

ACETANILIDE, p-FLUORO-

U. S. 1,955,891.

ACETANILIDE, THIO-

Brit. 340,319; Fr. 39,013.

ACETANILIDE, TRICHLOROETHYL-

Ger. 419,464.

ACETIC ACID

Pyroligneous acid (crude acetic acid) is used for mothproofing curled hair.-U. S. 369,739.

Wool treated with acetic acid is not protected against moths.-

Fr. 670,674; Ger. 504,886.

Acetic acid is given as an example of an organic acid used with sodium fluoride and sodium fluosilicate in mothproofing solutions.-

Brit. 235,915; U. S. 1,634,791.

Acetic acid may be used in combination with the sodium salt of 4,4',4"-trichloro-2,6-phenoldisulfonanilide.-Brit. 324,962.

Woolen goods are mothproofed by rolling them for 2 hours in a drum with a mixture of 1 part zinc fluoride and 7 parts wood meal with or without the addition of some acetic acid.-Aust. 114,458.

ACETIC ACID, AMYL ESTER

A solvent for:

Aluminum naphthenate.-U. S. 2,078,458.

Copper salts of higher fatty acids, e.g., copper oleate.-

Brit. 367,913.

ACETIC ACID, BENZYL ESTER

The reaction product of benzyl acetate and p-chlorophenol is used for mothproofing wool.-Ger. 542,069.

ACETIC ACID, BENZYLIDENEPHENYLHYDRAZIDE

Ger. 460,545.

ACETIC ACID, BUTYL ESTER

ACETIC ACID, METHYL ESTER

ACETIC ACID, PROPYL ESTER

Brit. 426,398.

ACETIC ACID, SALTS OF RARE EARTHS

A composition for mothproofing, moldproofing, and waterproofing fabrics consists of a mixture of aqueous solutions of egg albumin (6 pounds per 125 gallons of water) and a rare earth acetate (66 pounds per 250 gallons of water).-U. S. 1,921,926.

ACETIC ACID, TERPINYL ESTER

Mentioned as an insect repellent that lasts only 2 to 3 hours.-

Brit. 421,885.

ACETIC ACID, ACETYLPHENYLAMINO-

Fr. 518,821.

ACETIC ACID, FLUORO-

100 kilograms of material are mothproofed by treating with 2 kilograms of monofluoroacetic acid in 1,000 liters of water for one-half hour.-

Brit. 333,583; Fr. 670,674; Ger. 504,886.

ACETIC ACID, PHENYL-

Goods are treated a long time in a 4-percent solution of phenylacetic acid in benzene at 50° C., centrifuged, and dried with or without the application of heat.-Ger. 346,596.

ACETOACETIC ACID, ETHYL ESTER

The condensation product of acetoacetic ester, thiourea, and p-chlorobenzaldehyde is dissolved in cyclohexanone for use in mothproofing. Acetoacetic ester and thiourea are similarly condensed with o-chlorobenzaldehyde, benzaldehyde, or butyraldehyde.-Ger. 547,057.

Wool is mothproofed with 1 percent solution of the reaction product of acetoacetic ester with boron trifluoride.-Ger. 502,600; U. S. 1,757,222.

ACETOACETIC ACID, 4-CHLORO-2-NITROPHENYLSULFOXIDE ESTER

Brit. 484,448.

ACETONE

A solvent for the following mothproofing agents:

Acetylcellulose.-Ger. 576,411.

Aldehyde-phenol condensation products.-Brit. 316,900; Ger. 503,256.

Alkyl naphthalenesulfonic acids.-Brit. 313,043.

Alkyl sulfofluorides.-U. S. 2,114,577.

Aromatic polythiocyanates.-Ger. 501,135.

Arylsulfonic acid esters.-Brit. 491,434; U. S. 2,148,928.

4-Chlorophenylmercaptol of acetophenone.-Swiss 194,375.

Cinchona alkaloids.-Swiss 125,139; U. S. 1,615,843.

Diethyl- and triethyl-bismuth bromides.-U. S. 1,766,819.

Diphenyl ether and its derivatives.-Swiss 199,985.

Diphenyloxide and diphenylsulfide.-Brit. 502,320.

Ethylenediamine selenite.-U. S. 1,903,864; 1,962,276.

Hexachloroethane.-Ger. 353,682.

Mercaptals and mercaptoles (formed by condensing mercaptans with unsulfonated aldehydes or ketones).-Brit. 491,182; Fr. 829,834

Organic fluorine compounds.-Brit. 333,583; Fr. 670,674;
Ger. 504,886.

Potassium fluoboracetate.-Aust. 114,042; Brit. 298,538;
Ger. 490,221.

Strychnos alkaloids.-Brit. 327,009.

Thiourea and its derivatives, such as allyl-, phenyl- and o-tolyl.-Brit. 301,421; Fr. 664,151; Ger. 515,632; U. S. 1,748,579; 1,748,580.

Urea and its derivatives.-Minaeff and Wright (23).

Acetone is added to an alcoholic solution of antimony tannate to be used for mothproofing, so that when colored articles are treated the dyes will not be detrimentally affected.-U. S. 1,480,289.

A 1-percent solution of the reaction product of acetone with boron trifluoride is used to mothproof wool.-Ger. 502,600; U. S. 1,757,222.

Acetone and soap are used to emulsify aromatic thiocyanates in water

for use as mothproofing agents and as aphicides.-Brit. 325,910.

ACETONE, ADDITION COMPOUND OF, WITH MAGNESIUM BROMIDE

The addition compound of acetone with anhydrous magnesium bromide is decomposed by water and gives off toxic vapor used to fumigate verminous clothing.-Brit. 426,398.

ACETONITRILE, ADDITION COMPOUNDS

The addition compound of acetonitrile with anhydrous magnesium bromide or aluminum chloride is decomposed by water and gives off toxic vapors used to fumigate verminous clothing.-Brit. 426,398.

p-ACETOPHENETIDE, 3-NITRO-

100 parts by weight of wool are treated in water with 2 parts by weight of 3-nitroacetyl-p-phenetidine, 10 parts by weight of Glauber's salt and 2 parts by weight of formic acid for one-half hour.-Ger. 346,597.

ACETOPHENONE, 4-CHLOROPHENYL MERCAPTOLE

Made by condensing acetophenone with p-chlorothiophenol, it is used as a 2 percent solution in alcohol or acetone to mothproof animal fibers.-Brit. 491,182; Fr. 829,834; Swiss 194,375.

ACETOPHENONE, REACTION PRODUCT OF, WITH BORON TRIFLUORIDE

Wool is mothproofed with a 1 percent solution of the reaction product of acetophenone with boron trifluoride.-Ger. 502,600; U. S. 1,757,222.

ACETOPHENONE, omega-CHLORO- , DIMETHYLKETAL

U. S. 2,219,025.

ACETOPHENONE, DICHLOROSELENO-

Wool is mothproofed by impregnating it with 0.7 percent of its weight of dichloroselenoacetophenone applied as a 1 percent by weight solution in an organic solvent.-Aust. 123,423; Fr. 700,870; Ger. 524,590.

Soap to which dichloroselenoacetophenone has been added possesses mothproofing properties.--Fr. 40,647.

ACETYLSALICYLIC ACID

Ineffective.--Jackson and Wassell (18).

ACIDS (see under specific acids, acetic, benzoic, etc.)

Acids (for instance, sulfuric and formic acids) are commonly used with other materials for mothproofing. For example, a mothproofing bath contains 1 percent fluotitanic acid, 2 percent zinc sulfate, 10 percent Glauber's salt and 3 percent formic acid, calculated upon the weight of the wool.--Ger. 347,849.

Organic acids are used as ingredients of mothproofing solutions described in Brit. 235,915 and 236,218 and U. S. 1,634,791.

Organic acids, such as salicylic or resorcylic may be used in cold water solution to mothproof wool or fur.--Brit. 299,055; Fr. 518,821; 661,727; Ger. 506,770.

Organic acids or their alkali salts may be added to drenching solutions which also contain materials for mothproofing hides.--Ger. 595,849.

An ortho-hydroxy-carboxylic acid, in which the para position to the hydroxyl group is occupied by halogen or sulphur is effective.--Brit. 274,425.

Aromatic hydroxy acids and their halogenated substitution compounds are used with acid or neutral washing agents to make mothproofing detergent compositions.--U. S. 2,082,188; 2,130,435; 2,184,951.

Fatty acids have mothproofing properties. U. S. 1,694,219; also fatty acid salts of rare earths (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium and thallium).--Brit. 247,242.

Higher fatty acids and their salts are used as carriers for toxic substances in mothproofing solutions.-Brit. 236,218.

ACORUS CALAMUS L.

Paper is made insect proof as follows: to 100 pounds of paper pulp there is added during the process of manufacture a decoction of sweet flag root made by boiling 10 pounds in 1 gallon of water till it is reduced to 2 pints. A rosin soap containing naphthalene may be used with this. Fabrics are also rendered insect proof with this preparation.-Brit. 13,071 of 1909.

ACRIDINE, SULFONIC AND CARBOXYLIC DERIVATIVES.

Ger. 344,266.

ADHESIVE

An adhesive is added to a solution containing an arsenical compound and soap used to proof hair products against vermin.-Can. 261,810.

ALBUMIN, EGG

Fabrics are rendered moth-, mildew-, mold-, and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and a solution of 66 pounds of a metal acetate (cerium, thorium, lanthanum, aluminum, tin, zinc, copper, etc.) in 250 gallons of water.-U. S. 1,921,926.

ALCOHOL, SULFATED PRIMARY

A sulfated primary alcohol having from 12 to 22 carbon atoms is used as a wetting agent in a mothproofing solution containing triethanolamine fluosilicate.-U. S. 2,176,894.

ALCOHOLS

Solvents for:

Aldehyde-phenol condensation products.-Ger. 503,256.

Arylsulfonic acid esters.-Brit. 491,434; U. S. 2,148,928.

Brucine anilide and its salts.-U. S. 2,015,533.

Diphenyl ether and its derivatives.-Swiss 199,985.

Diphenyloxide and diphenylsulfide.-Brit. 502,320.

Halogenated benzene derivatives.-Brit. 484,448.

Mercaptals and mercaptoles (formed by condensing mercaptans with unsulfonated aldehydes or ketones).-Brit. 491,182; Fr. 829,834.

Organic fluorine compounds, e.g., fluoacetic acid.-Brit. 333,583; Fr. 670,674; Ger. 504,886.

Selenious acid salts of organic bases, e.g., ethylenediamine.-U. S. 1,903,864, and 1,962,276.

Thianthrene and its derivatives.-Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

Thiourea compounds.-Brit. 326,567.

Triphenylphosphine oxide condensation products with phenols.-Ger. 521,205.

Higher alcohols are used to prevent the efflorescence of aromatic hydroxy mothproofing compounds on dark materials.-Brit. 495,639; 497,214.

ALCOHOLS, ARYLOXY-

Effective vs. larvae of the black carpet beetle, Attagenus piceus.-U. S. 2,134,001.

ALCOHOLS, REACTION PRODUCTS OF, WITH ARYLPHENOLS

An insecticide comprises an alkali metal or alkaline earth metal salt of a sulfuric acid derivative of the reaction product of an alcohol containing more than two but less than seventeen carbon atoms and a

hydroxy substituted diaryl containing more than eleven but less than twenty-one carbon atoms as a constituent thereof.-U. S. 2,010,443.

ALDEHYDES

Condensation products obtained from aldehydes with p-bromo- or p-chlorophenols or their substitution products are useful for mothproofing wool.-Hung. 96,776.

Processes of condensing aldehydes and certain of their derivatives with p-halogenated phenols or naphthols to form mothproofing compounds are described in Brit. 316,900; 333,561, and 337,832, and with p-alkylated phenols in Brit. 330,893.

ALDEHYDES, CONDENSATION PRODUCTS OF, WITH MERCAPTANS

Examples are the condensation products from beta-chlorethylmercaptan and benzaldehyde, para-chlorothiophenol and isatin or acetophenone, dichlorobenzylmercaptan and cyclohexanone, ortho-chlorobenzylmercaptan and ortho-chlorobenzaldehyde.

An example of the application of these products is as follows: Twenty parts of the 4-chlorophenylmercaptan of acetophenone, obtained by condensation of 1 mol of acetophenone with about 2 mols of 4-chlorothiophenol in acetic acid containing hydrochloric acid are dissolved in 980 parts of alcohol or acetone. Furs, feathers or wool are immersed in the solution and then centrifuged and dried. The goods thus treated are immune from damage by moths. Even more dilute solutions suffice to impart a satisfactory protection.-Brit. 491,182.

ALDEHYDES, HALOGENATED

These and their hydrates are mentioned as known insecticides.-U. S. 2,129,025.

ALDOL

Ineffective.--Jackson and Wassell (18).

ALIZARINE SAPHIROL SE

Wool is mothproofed as follows: 100 kilograms of the material are treated in a dye bath with 1 kilogram of alizarine saphirol SE, 15 kilograms of acid potassium tartrate and 2 kilograms of acid ammonium fluoride in the customary manner. After rinsing the goods are completely immune to attack.--Brit. 295,742; Fr. 646,479; Ger. 468,914.

Brit. 333,584 specifies 15 kilograms sodium bisulphate and 2 kilograms 3,5,3',5'-tetrachloro-2,2'-dihydroxydiphenyl with 1 kilogram of the alizarine saphirol SE.

ALKALOID FLUOSILICATES

U. S. 2,075,359.

ALKALOIDS

See also Cinchona, Lupinus

Mentioned as known materials for protecting skins against moths.--Ger. 612,172.

"Many of the alkaloids and their derivatives" are mentioned as mothproofing agents that are affected by sunlight.--U. S. 2,127,252.

Salts of vegetable alkaloids insoluble in water but soluble in alcohol and in a minimum quantity of a non-volatile liquid are specified in Belg. 379,339, for protection against moths.

ALLSPICE

Allspice dusted upon woolens is ineffective for protecting them against clothes moths.--Scott et al. (38); Back (5); Mullin (24).

ALOES

An extract prepared by boiling 100 grams of Curacao bitter aloes with 4 liters of water and filtering is an ingredient of a mothproofing composition made by mixing 300 cc. of the bitter aloes extract, 500 cc. of quassia extract, 4 pounds of sodium fluoride, and 2 pounds of anhydrous sodium sulfate.-U. S. 1,789,565.

ALOIN

Ineffective.-Jackson and Wassell (18).

ALUM

The term "alum" strictly refers to double sulfates of aluminum and another metal, but is commonly incorrectly used by paper makers and tanners to refer to various grades of aluminum sulfate. Ordinary alum is aluminum potassium sulfate, $\text{Al}_2(\text{SO}_4)_3\text{K}_2\text{SO}_4 \cdot 24\text{H}_2\text{O}$.

Ineffective.-Jackson and Wassell (18).

Alum is an ingredient of many mothproofing solutions. For example 100 parts of wool are steeped over night in a bath consisting of 3 parts of antimoniac acid dissolved in 2 parts of hydrofluoric acid, 3 parts of concentrated sulfuric acid, and 3 parts of alum, after which the wool is rinsed and dried.-Brit. 173,536.

Alum is an ingredient of mothproofing compositions described in the following patents: Brit. 31,071 of 1909; 235,914; 235,915 and 313,043; U. S. 1,634,790; 1,634,791; 1,634,793; 1,634,794; 1,682,975; and 1,885,292.

ALUMINUM ACETATE

Ineffective.-Jackson and Wassell (18).

Fabrics are rendered moth-, mildew-, mold-, and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and a solution of 66 pounds of aluminum acetate

in 250 gallons of water.--U. S. 1,921,926.

Goods which have been treated with mothproofing materials (for example, hydrofluosilicic acid) are treated with metallic salts (for example, aluminum acetate) to form insoluble precipitates.--Ger. 347,723.

ALUMINUM AMMONIUM FLUORIDE

100 parts of wool are placed in a cold solution of 5,000 parts of water containing 4 parts of the double salt of aluminum fluoride with ammonium fluoride having most probably the formula $\text{AlF}_6(\text{NH}_4)_3$, 3 parts of aluminum sulfate and 3 parts of concentrated sulfuric acid. After 2 hours the goods are rinsed and dried.--U. S. 1,682,975.

Animal fibers are mothproofed by the application of aluminum ammonium fluoride, together with a lubricant used in one of the manufacturing steps.--Brit. 453,053.

ALUMINUM CHLORIDE

A weak solution of this is used to harden rubber latex, an ingredient of an adhesive mothproofing composition.--Brit. 463,725.

See "Acetonitrile Addition Compounds".

ALUMINUM FLUORIDE

Ineffective. Also a combination of aluminum fluoride, aluminum sulfate, ammonium fluoride, and sulfuric acid in water is ineffective.--Jackson and Wassell (18).

100 parts of wool are placed in a cold solution of 3 parts of aluminum fluoride, 1 part of ammonium fluoride, 3 parts of aluminum sulfate, and 3 parts of concentrated sulfuric acid in 500 parts of water. After two hours the goods are rinsed and dried.--Brit. 173,536; Swed. 59,841.

An insect-repellent animal fiber has incorporated therein the

products resulting from the aqueous interaction of a salt of naphthalene sulfonic acid, a sulfate, and a metallic fluoride, for example aluminum fluoride.-U. S. 1,494,085.

A process of rendering fibers mothproof comprises treating the fiber with formic acid and then with a solution of the product produced by treating a solution of a zinc salt of naphthalene monosulfonic acid with zinc sulfate and aluminum fluoride.-U. S. 1,515,182.

Aluminum fluoride is one of the soluble fluorides mentioned in many mothproofing compositions.-Fr. 518,821; Ger. 347,722; U. S. 1,634,790; 1,634,791; 1,682,975.

Furs are rendered resistant to mites by rolling them in a drum with wood flour that has been treated with a salt of hydrofluoric acid; such as aluminum fluoride.-Fr. 636,434; Ger. 469,256.

ALUMINUM FLUOSILICATE

U. S. 1,634,790; 1,634,791.

Water solutions of aluminum fluosilicate and sodium fluoride when used to drench fabrics thoroughly are of value.-Back and Cotton (8).

Goods are treated with hydrofluosilicic acid and then with aluminum acetate.-Ger. 347,723.

ALUMINUM HYDROXIDE

Woolen and silk goods are waterproofed and mothproofed by impregnating them with an aqueous suspension of aluminum hydroxide, the amount of the hydroxide being at most 5 percent of the dry weight of the goods.-Brit. 313,771.

ALUMINUM NAPHTHENATE

A saturated solution of aluminum naphthenate in amyl acetate is

prepared by dissolving approximately 30 percent of the aluminum salt in the solvent. A concentrated stock emulsion is prepared by emulsifying 80 parts of this saturated solution with 15 parts of water and 5 parts of triethanolamine oleate. The fabrics to be treated ^{may} either be sprayed or immersed in this emulsion diluted with water in the ratio 5:95.-
U. S. 2,078,458.

ALUMINUM PALMITATE

Ineffective.--Jackson and Wassell (18).

ALUMINUM SALTS

Used as mordants in mothproofing solutions.--Ger. 347,849;
U. S. 1,885,292.

The aluminum salts of naphthalenesulfonic acids (U. S. 1,494,085) and of alkyl-naphthalenesulfonic acids (Brit. 313,043) are ingredients of mothproofing solutions.

Also used to form insoluble salts with complex inorganic acids for mothproofing.--Ger. 347,723.

ALUMINUM SOAP

Aluminum soap solution in naphtha followed by ammonia in naphtha was ineffective in mothproofing wool.--Jackson and Wassell (18).

ALUMINUM SULFATE

A weak solution of this is used to harden rubber latex, an ingredient of an adhesive composition which may be used for mothproofing.--
Brit. 463,725.

Used with: Aluminum ammonium fluoride.--Brit. 173,536; Swed. 59,841;
U. S. 1,682,975.

Brucine anilide hydrochloride.--U. S. 2,015,533.

Lupinus alkaloids.-U. S. 1,885,292.

Strychnos alkaloids.-Brit. 327,009; Ger. 526,611.

Triethanolamine fluosilicate.-U. S. 2,176,894.

Aluminum sulfate is one of the ingredients of the mothproofing compositions described in Brit. 235,914 and 235,915; U. S. 1,494,085; 1,515,182; 1,634,790; and 1,634,791.

A mothproofing solution contains 4 pounds of aluminum sulfate and 10 pounds of butyl naphthalenesulfonic acid in 100 gallons of water.- Brit. 313,043. See also under Aluminum fluoride and Alum.

AMARINE

Ineffective.-Jackson and Wassell (18).

AMIDINES

Some of these compounds are mothproofing agents.-Brit. 498,090.

AMINES

Halogenated aromatic acylalkylamines are claimed for mothproofing purposes in Ger. 419,464.

Some amino fatty acid derivatives are useful mothproofing agents.- Brit. 476,843; 503,694; U. S. 2,139,190.

AMMONIA

Material is impregnated with formaldehyde solution followed by an aqueous solution of ammonia to form hexamethylenetetramine.-Ger. 272,822.

Aluminum soap solution in naphtha, followed by ammonia in naphtha, proved ineffective as mothproofing agents.-Jackson and Wassell (18).

Cellulosic material is impregnated with a solution containing arsenious acid and ammonia, this solution being capable of depositing free arsenious oxide upon exposure to air.-Brit. 321,786.

AMMONIUM CASEINATE

Used to emulsify in water a solution of chlorinated naphthalene in hydrogenated naphthalene.-U. S. 2,136,020.

AMMONIUM CHROMIUM SULFATE

A mothproofing composition comprises 10 parts of a salt of alkaloids from seeds of Lupinus with saponins of quillaia and 1 part of chrome alum.-U. S. 1,885,292.

AMMONIUM COMPOUND, BIS(n-DODECYLDIMETHYLCYCLOHEXYL-, FLUOSILICATE

The fabric is immersed in a 1 percent aqueous solution of n-dodecyl-dimethylcyclohexylammonium fluosilicate and dried.-U. S. 2,150,601.

AMMONIUM COMPOUND, BIS(n-DODECYLPHENYLDIMETHYL-, FLUOSILICATE

AMMONIUM COMPOUND, BIS(n-OCTADECYLBENZYLDIMETHYL-, FLUOSILICATE

AMMONIUM COMPOUND, BIS(n-OCTADECYLTRIMETHYL-, FLUOSILICATE

AMMONIUM COMPOUND, n-DODECYLTRIMETHYL-, FLUOSILICATE

AMMONIUM COMPOUND, OCTADECYLTRIMETHYL-, FLUOSILICATE

U. S. 2,150,601.

AMMONIUM COMPOUNDS, QUATERNARY SALTS

Many quaternary ammonium compounds are claimed for mothproofing in Brit. 483,368; Swiss 200,667; 200,669; 202,161; 202,162; 203,590; 203,591, U. S. 2,139,190; 2,150,601; 2,200,603.

Examples are:

Benzyl diethyl dodecyl ammonium chloride.-Brit. 483,368.

N-(4-cetylsulfonylphenyldimethylethyl) ammonium ethyl sulfate.-

Swiss 203,590.

Dibenzyl-di-methyl-di(3,4-dichlorobenzyl)-trimethylene diammonium bromide.-Brit. 483,368.

Di-(3,4-dichlorobenzyl)-aminoethyltriethylammonium sulfethylate.-
Brit. 483,368.

3,4-Dichlorobenzyl-diethyl-dodecylammonium chloride.-Brit.
483,368.

Octyltrimethylammonium fluosilicate.-U. S. 2,150,601.

(3,4-Dichlorobenzyl-methyl)-amino-ethyl-3',4'-dichlorobenzyl-
dimethyl-ammonium sulfomethylate.-Brit. 483,368.

Dimethyl-benzyl-(2-hydroxy-5-chlorobenzyl)-ammonium chloride.-
U. S. 2,200,603.

N-dimethyl N-dodecyl-aminoacetic acid dimethyl amide bromide.-
U. S. 2,139,190.

p-Dimethylethylammonium laurophenone-ethylsulfate.-Swiss 202,162.

Dodecyl-dimethylaniline-methylsulfate.-Swiss 200,669.

4-Trimethylammoniumphenyl-1-hexadecylsulfone methyl sulfate.-
Swiss 200,667.

p-Trimethylammonium-laurophenonemethylsulfate.-Swiss 202,161.

p-Trimethylammonium phenyl-undecyl-sulfone-carboxylic acid
ethyl ester-methyl sulfate.-Swiss 203,591.

AMMONIUM FLUORIDE

Ineffective either alone or admixed with aluminum fluoride, aluminum sulfate and sulfuric acid.-Jackson and Wassell (18).

Ammonium fluoride may be added to fluosulfonates for preserving porous organic material.-U. S. 1,448,276.

Wool, 100 parts by weight, is mothproofed by placing it in a cold solution containing 500 parts of water, 3 parts of aluminum fluoride, 1 part of ammonium fluoride, 3 parts of aluminum sulfate, and 3 parts of

concentrated sulfuric acid, all by weight. After 2 hours the material is rinsed and dried.-Brit. 173,536; Swed. 59,841.

One of the ingredients of the mothproofing compositions described in Brit. 453,053; U. S. 1,494,085; 1,515,182; 2,091,075.

AMMONIUM FLUOSILICATE

A mothproofing concentrate contains about 16 to 18 percent of ammonium fluosilicate and about 5 to 10 percent of ammonium benzenesulfonate.-U. S. 2,291,473.

AMMONIUM FLUOSULFONATE

Used for preserving textile fabrics and other porous organic materials.-U. S. 1,448,276.

AMMONIUM FLUOTITANATE

Brit. 173,536.

AMMONIUM HYDROGEN FLUORIDE

Mentioned as a mothproofing material in Aust. 114,042; Brit. 295,742; 298,538; Ger. 468,914.

A mothproofing solution for spraying carpets is made by dissolving 5 parts of ammonium bifluoride in 600 parts of water and 400 parts of alcohol.-Ger. 485,101.

Acid ammonium fluoride is used in combination with alizarine saphirol SE and acid potassium tartrate for mothproofing purposes.-Brit. 295,742; Fr. 646,479.

AMMONIUM MOLYBDATE

100 parts of wool are placed in a cold bath consisting of 2 parts of ammonium molybdate and 10 parts of nitric acid and while the goods are continually agitated a dilute solution of 1 part of sodium phosphate

is gradually added. The goods are allowed to remain for a few hours and then rinsed and dried.--Brit. 173,536; Ger. 347,720.

Ammonium molybdate, in combination with nitric acid and sodium phosphate in water, proved ineffective.--Jackson and Wassell (18).

AMMONIUM OLEATE

An emulsifier for chlorinated naphthalene.--Brit. 253,993; 261,241.

AMMONIUM PHOSPHATE

Ineffective.--Jackson and Wassell (18).

AMMONIUM POLYSULFIDE

Used as a vulcanizing agent with rubber latex, an ingredient of an adhesive composition which may be used for mothproofing.--Brit. 463,725.

AMMONIUM SELENATE

100 kilograms of wool are treated in 500 liters of water in the manner of a dyeing process with 0.5 percent of ammonium selenate and 4 percent of sulfuric acid. By this treatment the wool is permanently protected from attack by Dermestidae.--Aust. 123,423; Brit. 340,138; Fr. 700,870; Ger. 524,900; U. S. 1,903,864.

AMMONIUM SELENITE

Material to be protected is treated for some time with a cold aqueous solution containing 1 to 1.5 grams per liter of ammonium selenite. After rinsing and dyeing the materials are thus rendered mothproof.--Aust. 123,423; Brit. 340,138; Fr. 700,870; Ger. 524,590; U. S. 1,903,864.

A mothproofing soap is obtained by mixing 90 parts of soap powder with 10 parts of ammonium selenite.--Ger. 541,279.

AMMONIUM STEARATE

Raw horse hair is immersed in a warm alkaline solution of 2 percent

by weight of a sulforicinoleate for 12 hours. Then, without rinsing, it is immersed in a solution containing ammonium stearate to the amount of 5 percent by weight of the material treated. The hair is lightly squeezed and is then immersed in a suitable solution of magnesium chloride. It is finally subjected to prolonged rinsing and to washing and drying by the ordinary methods. After this treatment it is waterproof and insect-proof.-
Brit. 403,957.

AMMONIUM SULFATE

Ammonium sulfate may be added to fluosulfonates for preserving porous organic materials.-U. S. 1,448,276.

AMMONIUM TARTRATE HYDROFLUORIDE

Goods are mothproofed with a 2 percent solution of the addition product of 1 mol of mono-ammonium tartrate with 1 mol of hydrofluoric acid.-
Ger. 500,333.

AMYL ALCOHOL

A solvent for: Benzilic acid.-Ger. 346,596.

Copper oleate.-Brit. 367,913.

AMYL DIBUTYL PHOSPHATE

A mothproofing solution consists of benzene containing a mixture of 1 part of 3,4-dichlorobenzene sulfodibutylamide and 1.5 parts of dibutylamylphosphate.-Brit. 407,346; U. S. 1,955,207.

ANABASINE

Anabasine combined with benztetronic acid alpha-carboxylic acid is used for mothproofing wool in an alcoholic solution.-U. S. 2,127,879.

ANGELICA ROOT

Worthless for clothes moth-control when applied as a dust.-Scott,

Abbott and Dudley (38); Back (5); Mullin (24).

ANILIDES, FLUORO-

U. S. 1,955,891.

ANILINE

Aniline up to 20 percent in water is ineffective.-Minaeff and Wright (23).

ANILINE FLUOSILICATE

Used in a 1 percent aqueous solution.-U. S. 2,075,359.

ANILINE FLUOSILICATE, N-(2-AMINOETHYL)-

U. S. 2,075,359.

ANILINE FLUOSULFONATE

Preserves textile fabrics and other porous organic materials.-

U. S. 1,448,276.

ANISE OIL

Clothing treated with a soapy emulsion of anise oil will protect the wearer from the stings of gnats.-Ger. 557,760.

ANISOLE

The reaction product of anisole with boron trifluoride is used for mothproofing wool.-Ger. 502,600.

ANISOLE, m-CHLORO-

Condensed with N-(4'-chlorobenzyl)-5-isatinsulfonic acid to make a mothproofing agent.-Swiss 203,305.

ANTHRACENE

Ineffective.-Jackson and Wassell (18).

Sulfonic and carboxylic derivatives of anthracene are claimed for mothproofing purposes.-Ger. 344,266.

ANTHRACENE PITCH SULFONIC ACIDS

These and their salts are mentioned as examples of adhesives and fillers to be used with aromatic thiocyanates as mothproofing agents and as aphicides.-Brit. 325,910.

ANTHRACENE SULFONYL CHLORIDE

Ger. 449,126.

ANTHRAQUINONE

Ineffective.-Jackson and Wassell (18).

The sulfonic and carboxylic acid derivatives of anthraquinone are claimed for mothproofing purposes.-Ger. 344,266.

ANTIMONIC ACID

100 parts of wool are steeped over night in a bath consisting of 5,000 parts of water, 3 parts of antimonie acid dissolved in 2 parts of hydrofluoric acid (to form $\text{SbF}_3 \cdot 4\text{HF}$), 3 parts of concentrated sulfuric acid and 3 parts of alum. The wool is then rinsed and dried.-Brit. 173,536; U. S. 1,682,975.

ANTIMONIOTUNGSTIC ACID

Brit. 173,536; Fr. 518,821; Ger. 347,720.

ANTIMONY ALGINATE

Woolen fabrics are impregnated with a soluble salt of alginic acid and then placed in a bath of antimony salt.-Brit. 160,039; Ger. 304,506.

ANTIMONY CHLORIDE

Used to form addition compounds with methyl, ethyl, propyl and butyl formates, acetates, etc; which are decomposed by water and give off toxic vapors used to fumigate verminous clothing.-Brit. 426,398.

ANTIMONY FLUORIDE

Woolen materials are treated with a solution containing chromium fluoride and antimony fluoride in the ratio of 4 to 1 at 80° F., then squeezed or hydro-extracted and dried at 155° F. The chromium oxides and hydroxides formed protect the fibers from attack by moth larvae. The antimony counteracts the pale green color imparted by chromium oxide alone.-Brit. 413,529; Fr. 45,639; 1st addition to 774,692.

Woolen material is soaked in a 1 percent aqueous solution of antimony trifluoride, centrifuged, and then soaked in a 1 percent solution of cerium sulfate. The precipitated cerium fluoride and antimony sulfate are retained by the material. Woolen material may also be soaked in a 1 percent solution of calcium selenate, centrifuged and then soaked in a 1 percent solution of antimony trifluoride. As a result the water insoluble calcium fluoride and antimony selenate are incorporated with the material. Antimony trifluoride when used alone is superior to other water soluble antimony compounds.-U. S. 2,119,458.

ANTIMONY SALTS

Used as mordants with Lupinus alkaloids.-U. S. 1,885,292.

The use of antimony salts in mothproofing woolen goods is described in the following patents: Brit. 160,039; Ger. 304,506; 347,849; and 430,186.

Soap containing antimony salt is used to impregnate woolens.-Ger. 416,706.

ANTIMONY SELENATE

Antimony selenate together with calcium fluoride is deposited on woolen cloth by soaking the cloth in a solution of calcium selenate and then in a solution of antimony trifluoride.-U. S. 2,119,458.

ANTIMONY SULFATE

This is precipitated upon woolen cloth by the interaction of solutions of antimony trifluoride and cerium sulfate.-U. S. 2,119,458.

ANTIMONY TANNATE

Antimony tannate is precipitated on wool by dipping first in a solution of tannic acid and then in a solution of tartar emetic.-Ger. 430,186.

Cloth is treated for two hours in a hot bath containing 3 percent of tannin as compared with the weight of the cloth, which is left in the bath to cool. Then the liquid is squeezed out in a machine, and the cloth is placed in a 3 percent solution of an antimony salt. After an hour in this bath, the cloth may be rinsed and dried and then finished in the usual manner.-Brit. 160,039.

An alcoholic solution of antimony tannate may be applied.-U. S. 1,480,289.

ANTIPYRINE

Ineffective.-Jackson and Wassell (18); Minaeff and Wright (23).

ANTIPYRINE, SELENO-

Fibers are mothproofed by impregnating them with 1.4 percent of their weight of selenoantipyrine.-Aust. 123,423; Fr. 700,870; Ger. 524,590.

ARALKYL COMPOUNDS, CONDENSATION PRODUCTS OF, WITH PHENOLSULFONIC ACID

Aralkyl compounds are condensed with phenolsulfonic acids or with phenols with subsequent sulfonation to form mothproofing products.-Brit. 334,886.

AROMATIC COMPOUNDS, HALOGENATED, CONDENSATION PRODUCT OF, WITH OCTA-DECANEDIOL OR OCTADECENEDIOL

AROMATIC COMPOUNDS, HYDROXY-, CONDENSATION PRODUCT OF, WITH OCTADECANE-DIOL OR OCTADECENEDIOL

Aromatic hydroxy or halogenated compounds condensed with octadecene-diol or octadecane-diol form mothproofing agents.--Fr. 802,508.

ARSANILIC ACID

U. S. 1,766,819.

ARSENIC COMPOUNDS

Arsenic, green soap, and common salt are mixed in the ratio of 9:12:4 and dissolved in about 2/3 liter of water. This solution is mixed with about 1/3 liter of methylated spirit and the mixture applied to the leather side of fur by means of a brush or the like. Moths and their eggs in the hair are destroyed and mildew is prevented.--Brit. 368,179.

Cellulosic material is impregnated with a solution containing arsenious acid and ammonia, this solution being capable of depositing free arsenious oxide upon exposure to air.--Brit. 321,786.

Any arsenic compound may be employed as the toxic agent in mothproofing wool according to the process described in Brit. 236,218.

"Larvex" as it first appeared on the market contained arsenic equivalent to 0.05 percent arsenic pentoxide.--Back and Cotton (6), and Anon. (1).

"Speadlin's Odorless Moth-Proof", manufactured in California, is a solution of sodium arsenite and arsenic trioxide; "Carter's Mothproof", manufactured in Pasadena, California, contains sodium arsenite and sodium arsenate; and "American Odorless Mothproof", manufactured in Chicago, Illinois, contains arsenic trioxide.--Back and Cotton (6).

A mothproofing mixture contains 1,000 grams of white soap, 125 grams

of potassium carbonate, 250 grams of basic bismuth nitrate, 1,000 grams of arsenic and 1 liter of water.-Fr. 545,930.

"Solutions containing arsenic in any form should be avoided. They are not only likely to be dangerous, but they have proved the least effective of the solutions tested by the Department of Agriculture."-Back and Cotton (7, 8).

Hair felt is proofed against moths and beetle larvae by spraying with a solution of 10 gallons of water, 43 pounds of soda ash crystals, 10 pounds of white arsenic, 1 pound of glue and 1/4 to 1/2 pound of soap.-Can. 261,810; U. S. 1,558,122.

An ingredient of a drenching solution for hides.-Ger. 595,849.

A mothproofed covering for fabrics is impregnated with a solution of arsenic trioxide and sodium carbonate.-U. S. 2,017,159.

A perforated container contains natural food for the insect larvae impregnated with an oleaginous substance serving to attract the egg-laying insects and with a larvicide, e.g. arsenic trioxide.-U. S. 2,086,046.

"Arsenic powder" is listed as a clothes moth preventive.-Mullin (24, 25).

Used to poison food of clothes moth larvae.-U. S. 2,086,046.

Skins and leather are protected against moths by impregnating with arsenic salts dissolved in a fatty oil, e.g. croton oil.-Ger. 615,759.

Soluble arsenic salts are mentioned in U. S. 2,127,252.

ARSINE, TRIBENZYL-

ARSINE, TRIS(DIMETHYLAMINOPHENYL)-

ARSINE, TRIPHENYL-

ARSINE, TRIPHENYL-, DIHYDROXIDE

Brit. 303,092; Ger. 485,646; and U. S. 1,766,819.

ARSINE OXIDE, DIPHENYL-

ARSINIC ACID, CHLOROPHENYL-

U. S. 1,766,819.

ARSINIC ACID, PHENYL-

Material is mothproofed with a 2 percent aqueous solution of the sodium salt of phenylarsinic acid.-U. S. 1,766,819.

ATROPINE

Hung. 96,941.

AURAMINE O

Wool dyed with auramine O was badly damaged by clothes moth larvae and black carpet beetle larvae.-Minaeff (22).

AZIRIDINE, ALKYL-

U. S. 2,202,169.

BARIUM CHLORIDE

Used to poison food of clothes moth larvae.-U. S. 2,086,046.

BARIUM SALTS

Brit. 365,233; Fr. 707,840; U. S. 1,923,223.

Skins and leather are protected against moths by impregnating with barium salts dissolved in a fatty oil, e.g., croton oil.-Ger. 615,759.

BARIUM SELENATE

Barium selenate, together with calcium fluoride, is precipitated upon cloth by soaking the cloth first in a solution of calcium selenate and then in a solution of barium fluoride.-U. S. 2,119,458.

BAY OIL

To protect persons wearing summer clothes from the stings of gnats,

the garments are treated for 15 to 20 minutes in a bath prepared as follows: 6 percent (based on the weight of the goods) of curd soap, olive oil soap, or other good textile soap is dissolved in distilled water, and in this solution there is emulsified 2 percent of oil of cloves or 1 percent of oil of cloves and 1 percent of bay oil and 0.1 percent of pyrethrum extract.-Ger. 557,760.

BENTONITE

An essential ingredient of a petrolatum emulsion used for mothproofing fabrics.-U. S. 1,799,047.

A diluent for solid wax-cyclohexene oxide mixtures which are used to fumigate verminous clothing.-U. S. 2,101,587.

BENZALDEHYDE

Products useful for mothproofing wool are made by condensing benzaldehyde with:

Boron trifluoride.-Ger. 502,600; U. S. 1,757,222.

Beta-Chloroethylmercaptan.-Brit. 491,182; Fr. 829,834.

p-Halogenated phenols.-Brit. 316,900; Fr. 651,646; Ger. 503,256.

Also this product sulfonated.-Brit. 337,803; Fr. 39,377;

Ger. 541,629.

Phenol.-U. S. 1,594,632.

Thiourea and acetoacetic ester; or thiourea and oxalacetic ester.-Ger. 547,057.

BENZALDEHYDE, CHLORINATED

May be condensed with:

A p-alkylated phenol containing a free ortho position to a hydroxy group.-Brit. 330,893.

m-Chlorophenol, 2,5-dichlorophenol, or other meta-halogenated phenols.-Brit. 330,894.

p-Halogenated phenols.-Ger. 503,256.

BENZALDEHYDE, o-CHLORO-

May be condensed with:

o-Chlorobenzylmercaptan.-Brit. 491,182; Fr. 829,834.

2,4-Dichlorophenol and this product sulfonated.-Brit. 337,808.

Mixture of thiourea and acetoacetic ester, or oxalacetic ester, or benzoylacetone.-Ger. 547,057.

BENZALDEHYDE, o-CHLORO-, DIMETHYL ACETAL

Condensed with p-chlorophenol to form a product useful for mothproofing wool.-Brit. 337,832.

BENZALDEHYDE, p-CHLORO,

The condensation product of p-chlorobenzaldehyde and p-cresol is chlorinated or brominated to form a product useful for mothproofing wool.-Brit. 338,126.

The condensation product of p-chlorobenzaldehyde, thiourea, and acetoacetic ester is dissolved in cyclohexanone for use in mothproofing wool.-Ger. 547,057.

p-Chlorobenzaldehyde may be condensed with a p-halogenated phenol, e.g., p-chlorophenol, to form a product useful for mothproofing wool.-Brit. 316,900; Fr. 651,646.

p-Chlorobenzaldehyde is condensed with 2 mols of p-chlorophenol and this product sulfonated to form a mothproofing agent.-Brit. 337,808.

The condensation product prepared from p-chlorobenzaldehyde and 5-chloro-o-cresol is claimed to protect wool, fur, hair, etc. against moths

and similar insects and to combat the growth of micro-organisms such as bacteria and molds.-U. S. 1,880,566.

BENZALDEHYDE, CHLOROHYDROXY-

Condensation products of this with p-halogenated phenols are used for mothproofing wool.-Ger. 503,256.

BENZALDEHYDE, 2,6-DICHLORO-

2,6-Dichlorobenzaldehyde is condensed with 2,4-dichlorophenol and the product sulfonated to form a mothproofing agent.-Brit. 337,808.

BENZALDEHYDE, 2,6-DICHLORO-3-HYDROXY-

Condensed with a halogenated phenol, e.g., p-chlorophenol, to form a product useful for mothproofing wool.-Brit. 316,900; Fr. 651,646.

BENZALDEHYDE, HYDRAZONE, DERIVATIVES

Brit. 238,287.

BENZALDEHYDE, p-HYDROXY-

The condensation product of this with triphenyl phosphine oxide is useful for mothproofing wool.-Brit. 326,137; 521,205.

BENZALDEHYDE, METHYLPHENYLHYDRAZONE

Ger. 460,545.

BENZALDEHYDE, 3-HYDROXY-2,4,6-TRICHLORO-

Condensed with p-chlorophenol or p-bromophenol or their derivatives.-Brit. 316,900; Fr. 651,646.

The condensation product of 1 mol of this with 2 mols of p-chlorophenol is sulfonated for use as a mothproofing agent.-Brit. 337,808.

BENZAMIDE, THIO-

Wool is mothproofed by impregnating it with a solution of thiobenzamide in benzine. The strength of the solution is such that after drying

1 to 2 percent of the substance remains behind on the material.-Brit. 340,319; Fr. 39,013.

BENZANILIDE

Ineffective in concentrations up to 2 percent in acetone.-Minaeff and Wright (23).

BENZENE

A clothes moth repellent.-Sachs (35).

Benzene is added to an alcoholic solution of antimony tannate to prevent injury to the dye while mothproofing dyed fabrics.-U. S. 1,480,289.

Used with an aqueous solution of magnesium fluosilicate.-U. S. 2,127,252.

Benzene is effective in extracting and holding in solution the active principles of derris root and other substances containing rotenone which are used for mothproofing fabrics.-U. S. 1,854,948.

Benzene is used as a solvent for mothproofing materials, for example, 8 pounds of neutralized propyl naphthalene sulfonic acid and 2 pounds of benzine soap are dissolved in 100 gallons of benzene, or 7 parts of neutralized amyl naphthalene sulfonic acid and 3 parts of oleic acid are dissolved in benzene to form a 1.5 percent solution.-Brit. 313,043.

A mixture of benzene and alcohol is used as a solvent for tin triethylfluoride.-Brit. 303,092; U. S. 1,744,633.

A solvent for the following mothproofing agents:

Aldehyde-phenol condensation products.-Brit. 316,900; Ger. 503,256; U. S. 1,906,890.

Alkyl sulfofluorides.-U. S. 2,114,577.

Aryloxy alkylols.-U. S. 2,134,001.

Arylsulfonamides.-U. S. 1,962,276.

Benzil.-Ger. 346,597.

Boron trifluoride reaction products with organic materials.-
Ger. 502,600.

Brucine anilide and its salts.-U. S. 2,015,533.

Chloronaphthalenes (mono-, tri- and hexa-).-Brit. 253,993;
261,241; U. S. 1,725,656.

Cinchona alkaloids.-Swiss 125,139; U. S. 1,615,843; 1,694,219.

Beta-(meta- or para-hydroxyphenoxy)-beta-chlorodichthyl ether.-
U. S. 2,098,204.

Lanthanum stearate.-Brit. 247,242.

Monophenyl di(o-xenyl) phosphate.-U. S. 2,128,189.

Organic fluorine compounds.-Brit. 333,583; Fr. 670,674; Ger.
504,886; U. S. 1,955,891.

Pyrazolone.-U. S. 1,562,510.

Quinoidine fatty acid salts.-U. S. 1,694,219.

Strontium oleate.-U. S. 1,923,223.

Strychnos alkaloids.-Brit. 327,009.

Sulfochlorides.-Ger. 449,126.

Thio compounds.-Brit. 340,319.

Thiourea compounds.-Brit. 326,567; Fr. 685,123.

Tin tetrabenzyl.-Brit. 303,092; U. S. 1,744,633.

alpha-Toluic acid.-Ger. 346,596.

Triphenylstibine, tritolylstibine, and diphenylstibine acetate.-
U. S. 1,766,819.

BENZENE, CHLORO-

Mixed with naphthalene to make a moth repellent.--Swiss 186,764.

Monochlorobenzene may be used in place of paradichlorobenzene as a mothproofing material.--Brit. 10,379 of 1914.

A solvent for:

Aryloxy alkylols.--U. S. 2,134,001.

Phenyl dixenylphosphate.--U. S. 2,128,189.

Sulfochlorides, (e.g. 1,5-naphthalene disulfochloride).--Ger. 449,126.

BENZENE, CHLORODINITRO-

May be used with phenol for mothproofing textiles.--U. S. 1,594,632.

BENZENE, 1-CHLORO-4-NITRO-

A mixture for the protection of garments from moths contains at least 20 percent of this, the remainder being paradichlorobenzene.--U. S. 1,924,507.

BENZENE, DICHLORO-

Mentioned as a moth repellent.--Ger. 344,266.

Dichlorobenzenes are used as solvents for sulfochlorides (e.g. 1,5-naphthalene-disulfochloride).--Ger. 449,126.

Dichlorobenzene, 80 grams, is made into a powder with 20 grams paraformaldehyde and 1 gram hydrosulfite for use as a mothproofing material.--Jap. 78,953.

BENZENE, m-DICHLORO-

BENZENE, o-DICHLORO-

May be used instead of paradichlorobenzene for protecting clothing against moths.--Brit. 10,379 of 1914.

Mixed with naphthalene to make a moth repellent.--Swiss 186,764.

BENZENE, p-DICHLORO-

The use of paradichlorobenzene for protecting furs, skins and similar objects against attacks of moths was first described in Brit. 19,688 of 1912; Ger. 258,405; and U. S. 1,097,406.

It is mentioned as a moth remedy in Brit. 10,379 of 1914; Brit. 413,445; Fr. 774,692; Ger. 503,256; U. S. 2,101,587; 2,184,147. It is listed as a moth repellent by Gassner (15); Gershenfeld (16); Hecke (17); Kingzett (19); Meckbach (21); Mullin (24, 25); Sachs (36); and White, Fulton and Cranor (42).

Textiles are mothproofed by the application of steam impregnated with about 5 percent paradichlorobenzene and from .5 to 1 percent phenol.-U. S. 1,594,632.

Gypsum blocks are soaked in a volatile disinfectant (formaldehyde, phenol, etc.) and then immersed in molten naphthalene or paradichlorobenzene or a mixture of the two, and then in molten paraffin or similar material for use against moths and other injurious insects.-Ger. 409,510.

Insects and eggs in garments, rugs, furs, etc. are destroyed by fumigating with p-dichlorobenzene mixed with an essential oil such as cedar-leaf, cedar-wood, eucalyptus, pine or pine-needle oil to mask the odor.-U. S. 1,630,836.

A mixture for the protection of garments from moths consists of paradichlorobenzene and paranitrochlorobenzene, so proportioned that the mixture contains at least 20 percent of paranitrochlorobenzene.-U. S. 1,924,507.

Two ounces of paradichlorobenzene in 100 cu. ft. of clothes closet space, if evaporated quickly, exterminates any moths and their larvae in

the closet.-U. S. 1,982,358.

Material for combating clothes moths is made by mixing p-dichlorobenzene with naphthalene, Hung. 116,389; Swiss 186,764; with chlorocamphor, Swiss 201,548; with methyl formate-magnesium chloride addition compound, Brit. 426,398; or with 1,3-dichloroacetone dimethylketal, U. S. 2,129,025.

Timber is made insect-proof by impregnating it with a mixture of 1 part of 300° burning oil, 1 part of paradichlorobenzene and 1 part of hexachloronaphthalene.-Brit. 253,993.

Paradichlorobenzene was ineffective against adults and larvae of the clothes moth in a room fumigation test of 21 hours' duration, but killed larvae effectively in battery-jar tests.-Scott, Abbot and Dudley, (38).

Paradichlorobenzene is equal in effectiveness to naphthalene against clothes moths when they are exposed to it in tight containers.-Back (5).

Paradichlorobenzene in upholstered furniture is of no value in protecting against fabric pests.-Back and Cotton (6).

A vapor disseminating package for paradichlorobenzene and other evaporable substances is described in U. S. 2,069,179.

BENZENE, DIHYDROXY-, HALOGENATED

U. S. 2,093,778.

BENZENE, DINITRO-

May be used with phenol for mothproofing textiles.-U. S. 1,594,632.

BENZENE, TETRACHLORO-

Brit. 10,379 of 1914.

BENZENE, TRICHLORO-

A trichlorobenzene may be used in place of paradichlorobenzene for protecting clothing against moths.-Brit. 10,379 of 1914.

Trichlorobenzene is used as a solvent for chlorides of sulfo acids employed for mothproofing purposes.-Ger. 449,126.

BENZENE DERIVATIVES

Skins and leather are protected against moths by impregnating them with benzene derivatives dissolved in a fatty oil, e.g., croton oil.-Ger. 615,759.

BENZENE DERIVATIVES, HALOGENATED

Brit. 484,448.

m-BENZENEDISULFONANILIDE, 2,4,4',4"-TETRACHLORO-

Brit. 324,962.

m-BENZENEDISULFONANILIDE, 2,4',4",5-TETRACHLORO-

m-BENZENEDISULFONANILIDE, 4,4',4",5-TETRACHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

m-BENZENEDISULFONANILIDE, 4,4',4",6-TETRACHLORO-

Fr. 686,712; Ger. 506,988; U. S. 1,962,276.

BENZENEDISULFONIC ACID, SODIUM SALT

One of the ingredients of the mothproofing composition claimed in Brit. 235,914; U. S. 1,634,790.

m-BENZENEDISULFONIC ACID, 5-CHLORO-2-HYDROXY-, DIOCTYL ESTER

Brit. 497,214; Fr. 48,395; 1st addition to 802,508.

BENZENESULFONAMIDE, N,N'-4-ACETAMIDOPHENYLENE-m-BIS(3,4-DICHLORO-

BENZENESULFONAMIDE, N,N'-BIPHENYLENE-BIS(5-CHLORO-2-HYDROXY-

BENZENESULFONAMIDE, N,N'-BIPHENYLENE-BIS(2,5-DICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

BENZENESULFONAMIDE, BROMO-N-METHYL-

Used with phosphoric acid esters.-U. S. 1,955,207.

BENZENESULFONAMIDE, 4-BROMO-N-METHYL-

A mothproofing solution comprises benzine containing 2 parts of this compound and 3 parts of diethylbutylglycol phosphate.-Brit. 407,356.

BENZENESULFONAMIDE, N-BUTYL-3,4-DICHLORO-

Goods to be protected against textile pests are treated with a carbon tetrachloride solution containing 1 part of this compound and 1.5 parts of tricresylphosphate.-Brit. 407,356; U. S. 1,955,207. Benzine may be used as a solvent.-Fr. 42,266.

BENZENESULFONAMIDE, 2-CHLORO-N,4-DIMETHYL-

A mothproofing solution comprises benzine containing 2 parts of this compound and 3 parts of diethylbutylglycol phosphate.-Brit. 407,356.

BENZENESULFONAMIDE, 4-CHLORO-

A mothproofing solution comprises benzene containing a mixture of 2 parts of 4-chlorobenzenesulfonamide and 3 parts of diethylbutylglycol phosphate.-Brit. 407,356.

Used with phosphoric acid esters.-U. S. 1,955,207.

BENZENESULFONAMIDE, 4-CHLORO-N-METHYL-

Used with a phosphoric acid ester in benzine solution.-Fr. 42,266; Ger. 558,509.

BENZENESULFONAMIDE, N,N'-4-CHLOROPHENYLENE-m-BIS(3,4-DICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

BENZENESULFONAMIDE, N,N-DIBUTYL-3,4-DICHLORO-

Goods to be protected are treated with a benzine solution containing 1 part of this compound and 1.5 parts of dibutylamylphosphate.-

Brit. 407,356; U. S. 1,955,207.

BENZENESULFONAMIDE, 3,4-DICHLORO-

Goods to be protected are treated with a carbon tetrachloride solution of 1 part of this compound and 2 parts of triethylphosphate.-Brit. 407,356; U. S. 1,955,207.

BENZENESULFONAMIDE, 3,4-DICHLORO-N,N-DIETHYL-

Goods to be protected are treated with a benzine solution containing a mixture of this compound with 1.5 parts of triisoamylphosphate.-Brit. 407,356; U. S. 1,955,207.

BENZENESULFONAMIDE, 3,4-DICHLORO-N,N-DIMETHYL-

Goods are treated with a trichloroethylene solution containing 1 part of this compound and 1.5 parts of triethylphosphate.-Brit. 407,356; U. S. 1,955,207.

BENZENESULFONAMIDE, 3,4-DICHLORO-N-METHYL-

Wool, feathers or hair are treated in a benzine solution (100 parts) of a mixture containing 2 parts of this compound and 3 parts of diethylbutylglycolphosphate. After complete penetration the goods are taken out and centrifuged until 1 to 2 percent of the effective mixture remains on the material after evaporating the excess solvent. By this treatment the goods are protected against textile pests.-Brit. 407,356; Fr. 42,266; Ger. 558,509; U. S. 1,955,207.

BENZENESULFONAMIDE, 3,4-DICHLORO-N-OLEYL-

Goods to be protected against textile pests are treated with a perchloroethylene solution containing a mixture of 1 part of this compound, 1 part of diethylbutylglycolphosphate, and 1 part of tributylphosphate.-Brit. 407,356.

BENZENESULFONAMIDE, N-METHYL-2-NITRO-

A mothproofing solution comprises benzine containing a mixture of 2 parts of this compound and 3 parts of diethylbutylglycolphosphate.-
Brit. 407,356; U. S. 1,955,207.

BENZENESULFONAMIDE, N,N'-PHENYLENE-1-(3-AMINO-4-CHLORO)-3-(2,4,5-TRICHLORO)BIS-

BENZENESULFONAMIDE, N,N'-PHENYLENE-m-BIS(p-BROMO-

BENZENESULFONAMIDE, N,N'-PHENYLENE-m-BIS(p-CHLORO-

BENZENESULFONAMIDE, N,N'-PHENYLENE-m-BIS(2,4-DICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988.

Twenty parts of this are emulsified in 80 parts of the alkyl ester of sulfurized castor oil; 20 parts of the mixture in 1,000 parts of water are used to clean and mothproof wool.-U. S. 2,082,188; 2,130,435; 2,184,951.

Wool to be mothproofed is washed with a soap which contains 80 parts of neutral soap and 20 parts of this compound.-Ger. 581,990; U. S. 1,962,276.

BENZENESULFONAMIDE, N,N'-PHENYLENE-m-BIS(2,4-DICHLORO-

BENZENESULFONAMIDE, N,N'-PHENYLENE-m-BIS(3,4-DICHLORO-

BENZENESULFONAMIDE, N,N'-PHENYLENE-o-BIS(3,4-DICHLORO-

BENZENESULFONAMIDE, N,N'-PHENYLENE-p-BIS(3,4-DICHLORO-

BENZENESULFONAMIDE, N,N'-PHENYLENE-m-BIS(3,4-DICHLORO-4-HYDROXY-

BENZENESULFONAMIDE, N,N'-PHENYLENE-m-BIS(2,4,5-TRICHLORO-

BENZENESULFONAMIDE, N,N'-PHENYLENE-1-(3,5-DICHLORO-2-HYDROXY)-3-(2,4,5-TRICHLORO)BIS-

BENZENESULFONAMIDE, N,N'-PHENYLENE-1-(3,4-DICHLORO)-3-(2,4,5-TRICHLORO)BIS-

BENZENESULFONAMIDE, N,N'-TOLYLENE-2,4-BIS)-2,5-DICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

BENZENESULFONANILIDE, 3'-AMINO-2,4-DICHLORO-

This mothproofing compound can be used in admixture with soap.-

Brit. 366,090; Fr. 40,647.

BENZENESULFONANILIDE, 3'-BENZYLSULFAMYL-2,4,4',5-TETRACHLORO-

Brit. 324,962.

BENZENESULFONANILIDE, 1,4-BIS(p-CHLOROPHENYLSULFONAMIDO)-4'-CHLORO-

BENZENESULFONANILIDE, 4'-CHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

BENZENESULFONANILIDE, 4'-CHLORO-N-METHYL-

2 parts of this compound and 3 parts of diethylbutylglycolphosphate are used in benzine solution.-Brit. 407,356; U. S. 1,955,207.

BENZENESULFONANILIDE, 3,4-DICHLORO-

Goods are treated in a benzine solution containing a mixture of 1 part of this compound and 1.5 parts of the diethylbutylglycolphosphate.-Brit. 324,962; 407,356; Fr. 686,721; Ger. 506,988; U. S. 1,955,207; 1,962,276.

BENZENESULFONANILIDE, 3,4'-DICHLORO-

BENZENESULFONANILIDE, 3,4'-DICHLORO-4'-FLUORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

BENZENESULFONANILIDE, 3,4'-DICHLORO-N-METHYL-

Goods to be protected against textile pests are treated in a carbon tetrachloride solution containing a mixture of 1 part of this compound with 1 part of triethylphosphate and 0.5 part of diethylbutylglycolphosphate.-Brit. 407,356; U. S. 1,955,207.

BENZENESULFONANILIDE, 3,4-DICHLORO-2'-METHYL-

Goods to be protected against textile pests are treated with a trichloroethylene solution of 1 part of this compound, 0.5 part of triethylphosphate and 1 part of diethylbutylglycolphosphate.-Brit. 407,356.

BENZENESULFONANILIDE, 2-HYDROXY-3,5-DICHLORO-

BENZENESULFONANILIDE, 4'-METHYL-3'-PHENYLSULFAMYL-2,4,5-TRICHLORO-

Brit. 324,962.

BENZENESULFONANILIDE, 3'-PHENYLSULFAMYL-2,4,4',5-TETRACHLORO-

Fr. 686,721; Ger. 506,988.

BENZENESULFONANILIDE, 3'-SULFONANILIDO-2,4,4',5-TETRACHLORO-

U. S. 1,962,276.

BENZENESULFONANILIDE, 1,4,5-TRICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

BENZENESULFONIC ACIDS

Ger. 344,266.

Sodium benzenesulfonate is an ingredient of mothproofing compositions described in Brit. 235,914; and U. S. 1,634,790.

BENZENESULFONIC ACID, AMMONIUM SALT

A mothproofing concentrate contains about 16 to 18 percent of ammonium fluosilicate and about 5 to 10 percent of ammonium benzene sulfonate. Textile penetration is improved by providing the benzene ring with an aliphatic side chain preferably containing 6 to 18 carbon atoms.-U. S. 2,291,473.

BENZENESULFONIC ACID, MAGNESIUM SALT

A mothproofing concentrate contains about 16 to 20 percent of

magnesium fluosilicate and about 5 to 10 percent of magnesium benzene sulfonate. Textile penetration is improved by providing the benzene ring with an aliphatic side chain preferably containing 6 to 18 carbon atoms.-U. S. 2,291,473.

BENZENESULFONIC ACID, CHLORO-

Claimed for mothproofing purposes in Ger. 344,266. The sodium salt is an ingredient of the mothproofing composition described in Brit. 235,914 and U. S. 1,634,790.

BENZENESULFONIC ACID, p-CHLORO-, p-AMYLPHENYL ESTER

Brit. 491,434; U. S. 2,148,928.

BENZENESULFONIC ACID, p-CHLORO-, p-CHLOROBENZENETHIOL ESTER

Brit. 484,448.

BENZENESULFONIC ACID, p-CHLORO-, o-CHLOROPHENYL ESTER

Brit. 491,434; U. S. 2,148,928.

BENZENESULFONIC ACID, p-CHLORO-, p-CHLOROPHENYL ESTER

Five parts of p-chlorobenzene sulfonic acid ester of p-chlorophenol are dissolved in 995 parts of acetone or alcohol, and wool, furs and the like are treated by dipping, centrifuged and dried. The goods thus treated are mothproof; even more diluted solution suffice in order to obtain a good protection.-Brit. 491,434; U. S. 2,148,928.

BENZENESULFONIC ACID, p-CHLORO-, DICHLOROPHENYL ESTER

U. S. 2,148,928.

BENZENESULFONIC ACID, CHLORO-, PHENYL ESTER

U. S. 2,148,928.

BENZENESULFONIC ACID, p-CHLORO-, PHENYL ESTER

U. S. 2,148,928.

BENZENESULFONIC ACID, CHLOROCRESOTAMIDO-

Material which has been treated with this compound is subsequently treated with a solution of benzyl-triphenylphosphonium sulfate.-Brit. 312,163; Fr. 675,413; Ger. 506,987.

BENZENESULFONIC ACID, 4-CHLORO-2-FORMYL-

Substituted benzal chlorides obtained by heating this compound with phosphorus pentachloride may be condensed with p-halogenated phenols to form products useful for mothproofing wool.-Brit. 337,832.

p-Chlorophenol (2 moles) is condensed with the chloride (1 mole) obtained from 5-chloro-2-sulfo-benzaldehyde and phosphorus pentachloride, in the presence of chlorobenzene and ferric chloride or nitrobenzene and aluminum chloride. The product is used for combating clothes moths, bacteria, mold, etc.-Ger. 540,208.

BENZENESULFONIC ACID, 4-CHLORO-3-FORMYL-

May be condensed with a p-halogenated phenol, e.g., p-chlorophenol, to form a product useful for mothproofing wool.-Brit. 316,900; Fr. 651,646.

May be condensed with thiophenol, 4-chlorothiophenol, tetrahydrothionaphthol or other mercaptans to form water soluble thioacetal sulfonic acids useful for mothproofing wool.-Brit. 492,938.

BENZENESULFONIC ACID, 5-CHLORO-2-FORMYL-

May be condensed with p-halogenated phenols to form products useful for mothproofing wool.-Brit. 337,832; Ger. 540,228.

BENZENESULFONIC ACID, 2,5-DICHLORO-, o-CHLOROPHENYL ESTER

BENZENESULFONIC ACID, 2,5-DICHLORO-, p-CHLOROPHENYL ESTER

Brit. 491,434; U. S. 2,148,928.

BENZENESULFONIC ACID, 3,4-DICHLORO-, o-CHLOROPHENYL ESTER

BENZENESULFONIC ACID, 3,4-DICHLORO-, p-CHLOROPHENYL ESTER

Brit. 491,434; U. S. 2,148,928.

BENZENESULFONIC ACID, 3,5-DICHLORO-2-HYDROXY-, DODECYL ESTER

Brit. 497,214; Fr. 48,395; 1st addition to 802,508.

BENZENESULFONIC ACID, 2-FORMYL-,

The condensation product obtained from 1 mole of benzaldehyde-o-sulfonic acid and 2-moles of p-chlorophenol is brominated. The product is useful in combating clothes moths, bacteria, mold, etc.-Ger. 544,293.

The condensation product of 2,5-dibromophenol with sodium benzaldehyde-o-sulfonate is suitable for mothproofing.-Ger. 536,551; U. S. 1,906,890.

Two moles of 2,4-dichlorophenol are condensed with 1 mole of the chloride obtained from benzaldehyde-o-sulfonic acid and phosphorus pentachloride.-Fr. 39,334.

The condensation product of 3-chloroguaiacol with sodium benzaldehyde-o-sulfonate is suitable for mothproofing.-Ger. 536,551; U. S. 1,906,890.

An agent for combating textile pests comprises the condensation product obtained from 1 mole of benzaldehyde-o-sulfonic acid and 2 moles of a phenol or naphthol ether of an aliphatic or higher cycloaliphatic alcohol, e.g., hexyl alcohol or cyclohexanol, or a benzyl alcohol, e.g., benzyl alcohol or p-chlorobenzyl alcohol.-Fr. 758,192.

p-Chlorophenol (2 moles) is condensed with the chloride (1 mole) obtained from o-sulfobenzaldehyde and phosphorus pentachloride in the presence of chlorobenzene and ferric chloride or nitro-benzene and

aluminum chloride. The product is used for combating clothes moths, bacteria, mold, etc.-Ger. 540,208.

o-Benzaldehydesulfonic acid is not used as such as a mothproofing agent but many of its condensation products are so employed. Examples are the products formed by condensing it with phenol, cresol or their chlorinated derivatives.-Aust. 118,640; 124,284; Brit. 316,900; 330,893; 330,894; 333,561; 335,547,338,126; Fr. 651,646; 681,795; Ger. 503,256; 506,989; 513,383; 513,387; U. S. 1,906,890.

The condensation product of 1 mol of o-benzaldehydesulphonic acid with 2 mols of p-fluorophenol is useful for mothproofing wool.-Ger. 535,151.

o-Benzaldehydesulfonic acid may be condensed with thiophenol, 4-chlorothiophenol, tetrahydrothionaphthol or other mercaptans to form water soluble thioacetal sulfonic acids useful for mothproofing wool.-Brit. 492,938.

Condensed with p-chlorobenzylmercaptan to make a mothproofing agent.-Swiss 193,611.

BENZENESULFONIC ACID, 2-FORMYL-, CONDENSATION PRODUCT OF, WITH CHLOROPHENOL AND PHOSPHORUS PENTACHLORIDE

Fr. 39,334.

BENZENESULFONIC ACID, 2-FORMYL-, CONDENSATION PRODUCT OF, WITH 2,4,6-TRICHLOROPHENOL

Ger. 548,822.

BENZENESULFONIC ACID, 2-FORMYL-, SODIUM SALT, CONDENSATION PRODUCT OF, WITH 5-CHLORO-o-CRESOL

Ger. 536,551.

BENZENESULFONIC ACID, 2-FORMYL-, SODIUM SALT, CONDENSATION PRODUCT OF, WITH 2,5-DICHLOROPHENOL

Ger. 536,551.

BENZENESULFONIC ACID, 2-FORMYL-, SODIUM SALT, CONDENSATION PRODUCT OF,
WITH m-CHLOROPHENOL

U. S. 1,906,890.

BENZENESULFONIC ACID, 3-FORMYL-

This may be condensed with thiophenol, 4-chlorothiophenol, tetrahydrothionaphthol or other mercaptans to form water soluble thioacetal sulfonic acids useful for mothproofing wool.-Brit. 492,938.

May be condensed with a p-halogenated phenol, e.g., p-chlorophenol, to form a product useful for mothproofing wool.-Brit. 316,900; Fr. 651,646.

BENZENESULFONIC ACID, 4-FORMYL-,

The triphenylmethane derivative obtained by the condensation of sodium benzaldehyde-p-sulfonate with a technical mixture of m- and p-cresol which have been chlorinated in all ortho and para positions to the hydroxyl group is efficacious in combating moths and other textile pests.-Brit. 383,493; Ger. 537,768; U. S. 1,971,436.

Mothproofing properties are shown by the hydrol obtained by the condensation of equimolecular quantities of 2-methyl-4,6-dichlorophenol and benzaldehyde-p-sulfonic acid.-Brit. 383,493.

The condensation product of this compound with 2,4-dichlorophenol is used for mothproofing textiles.-Swiss 148,330.

This may be condensed with thiophenol, 4-chlorothiophenol, tetrahydrothionaphthol or other mercaptans to form water soluble thioacetal sulfonic acids useful for mothproofing wool.-Brit. 492,938.

BENZENESULFONIC ACID, 4-FORMYL-, CONDENSATION PRODUCT OF, WITH 4,6-DICHLORO-o-CRESOL

BENZENESULFONIC ACID, 4-FORMYL-, CONDENSATION PRODUCT OF, WITH 2,4,6-TRIBROMOPHENOL

BENZENESULFONIC ACID, 4-FORMYL-, CONDENSATION PRODUCT OF, WITH 2,4,6-TRICHLORO-m-CRESOL

BENZENESULFONIC ACID, 4-FORMYL-, CONDENSATION PRODUCT OF, WITH 2,4,6-TRICHLOROPHENOL

Ger. 548,822.

BENZENESULFONIC ACID HYDROFLUORIDE, POTASSIUM SALT

Goods are mothproofed by a 2 percent aqueous solution of the addition product of 1 molecule of potassium benzenesulfonate with 2 molecules of hydrofluoric acid.-Ger. 500,333.

BENZENESULFONIC ACIDS, NITRO-

Ger. 344,266.

BENZENESULFONOLEAMIDE, 3,4-DICHLORO-

A mothproofing solution consists of perchlorethylene containing a mixture of 1 part of 3,4-dichlorobenzenesulfoleic amide and 1 part of diethylglycolphosphate and 1 part of tributylphosphate.-U. S. 1,955,207.

BENZENESULFON-o-TOLUIDE, 3,4-DICHLORO-

The goods are treated with a trichloroethylene solution of 1 part of this compound in 0.5 part of triethylphosphate and 1 part of diethylbutylglycolphosphate.-U. S. 1,955,207.

BENZENETHIOL

This may be condensed with benzaldehyde-ortho-sulfonic acid or other aromatic aldehyde-or ketone-sulfonic acid to form water-soluble

thioacetal sulfonic acids useful for mothproofing textiles.-Brit. 492,938.

BENZENETHIOL, m-CHLORO-

BENZENETHIOL, o-CHLORO-

Brit. 492,938.

BENZENETHIOL, p-CHLORO-

Brit. 492,938.

The condensation product of this with isatin or acetophenone is a mothproofing agent.-Brit. 491,182; Fr. 829,834.

BENZENETHIOL, o-NITRO-

Brit. 492,938.

BENZIDINE HYDROFLUORIDE

Ineffective.-Jackson and Wassell (18).

BENZIL

It is applied as a spray, 2 grams in 100 grams of benzene.-Ger. 346,597.

BENZILIC ACID

5 parts benzilic acid dissolved in 100 parts amyl alcohol are used to moisten goods to be protected.-Fr. 518,821; Ger. 346,596.

BENZINE

Packard (27) in 1889, stated that clothes moths can be most readily killed by pouring benzine among them.

Back (5) in 1923 recommended treatment of cracks and hiding places with benzine for the killing of fabric pests.

Mullin (24, 25) in 1925 mentioned benzine as a clothes moth remedy.

Benzine is added to an alcoholic solution of antimony tannate to prevent injury to dyed fabrics by the mothproofing solution.-U. S.

1,480,289.

Benzine has been used as a solvent for the following mothproofing materials:

Aldehyde-phenol condensation products.-Brit. 316,900; Ger. 503,256.

Alkyl sulfofluorides.-U. S. 2,114,577.

Antimony-soap.-Ger. 416,706.

Aromatic hydroxy compounds, e.g., 4-chloro-2-(isoamylcyclohexyl)-phenol.-Brit. 495,639; 497,214.

Arylsulfonamides.-U. S. 1,962,276.

Boron trifluoride-acetophenone reaction product.-Ger. 502,600; U. S. 1,757,222.

Brucine anilide and its salts.-U. S. 2,015,533.

m-Chlorophenol with formaldehyde, condensation product of.-U. S. 1,906,890.

4,6-Dichloro-2-sec-decylphenol and other halogenated phenols.-Brit. 474,600.

4,6-Dichloro-2-isodecylphenol.-Fr. 802,508.

Ethers or esters of aromatic hydroxy compounds.-Brit. 495,761.

Mixtures of arylsulfonamides and phosphoric acid esters.-Ger. 558,509; U. S. 1,955,207.

Organic fluorine compounds.-Brit. 333,583; Fr. 670,674; Ger. 504,886; U. S. 1,955,891.

Phenyl-capronyl-pseudothiourea.-Brit. 337,823.

Phosphoric acid aryl esters.-Ger. 480,180; U. S. 1,748,675.

Sulfonanilides.-Brit. 324,962.

Sulfochlorides, e.g. 1,5-naphthalene disulfochloride.-Ger.

449,126.

Strontium oleate.-Brit. 365,233; Fr. 707,840; Ger. 515,956;

U. S. 1,923,223.

Thiobenzamide and other thio compounds.-Brit. 340,319.

Thiourea compounds.-Brit. 326,567.

Tin tetraphenyl.-Dutch 20,570.

2,4,5-Trichloro-3'-valeryl-amino-4'-chlorobenzenesulfonanilide.-

Fr. 686,721; Ger. 506,988.

Benzine is also used in mixed solvents for dissolving mothproofing materials. Examples are: benzine and cyclohexanone for dissolving o,o'-dihydroxybiphenyl.-Brit. 333,584; Ger. 520,184.

A mixture of 1800 parts benzine and 200 parts butyl alcohol is used as a solvent for fluoboracetic acid (2 percent solution) for mothproofing 100 kg. of goods.-Ger. 490,221.

A mothproofing agent consists of water-insoluble vegetable acid compounds produced by the reaction of crystallized quassin and quinine in the presence of oleic acid and hydrogen peroxide, dissolved in benzine, petrol, or the like to which is added a small quantity of a stable, non-volatile heavy oil, such as cade oil, paraffin, or the like.-Brit. 339,938.

Mothproofing solutions are prepared by mixing an aryl sulfonamide with an ester of phosphoric acid and diluting the mixture with benzine.-Brit. 407,356; Fr. 42,266.

Articles to be mothproofed are treated with a benzine solution containing 5 percent of a mixture of 2 parts of 3,4-dichlorobenzenesulfomethylamide and 3 parts of diethylbutylglycolphosphate.-Fr. 42,266.

Material to be mothproofed is treated at room temperature for about 15 minutes with a 1.25 percent benzine solution of 4 parts brucine oleate and 2 parts salol.-Ger. 526,611.

BENZINE SOAP

A mothproofing solution contains 8 pounds of neutralized propyl naphthalene sulfonic acid and 2 pounds of benzine soap dissolved in 100 gallons of benzene.-Brit. 313,043.

BENZOIC ACID

A constituent of "Pyromoth".-Back and Cotton (6).

BENZOIC ACID, BENZYLIDENEPHENYLHYDRAZIDE

Ger. 460,545.

BENZOIC ACID, DINITRO-

Ineffective.-Jackson and Wassell (18).

BENZOIC ACID, 2,2'-DITHIOBIS(5-HYDROXY-

This compound and its derivatives, e.g., anilide, halogenanilide, etc. are mothproofing agents.-U. S. 1,734,682.

BENZOIC ACID, o-FLUORO-

BENZOIC ACID, p-FLUORO-

BENZOIC ACID, 3-FLUORO-4-METHOXY-

U. S. 1,955,891.

BENZOIC ACID, 4-FLUORO-3-NITRO-, SODIUM SALT.

Wool steeped in a 1 percent aqueous solution of 3-nitro-4-fluoro-1-benzoic acid, sodium salt, is not attacked by moths.-Brit. 333,583; Fr. 670,674; Ger. 504,886.

BENZOIC ACID, p-HYDROXY-, ETHYL ESTER

The condensation product of triphenyl phosphine oxide with p-hydroxy-

benzoic acid ethyl ester, is useful for mothproofing wool.-Brit. 326,137; Ger. 521,205.

BENZOIC ACID, HYDROXYMETHYL-

Brit. 299,055; Ger. 506,770.

BENZOIC ACID, 2-NAPHTHYL ESTER

Ineffective.-Jackson and Wassell (18).

BENZOIC ACID, 3-NITRO-

Wool steeped in a 1 percent aqueous solution of sodium 3-nitro-1-benzoate is not protected against moths.-Brit. 333,583; Fr. 670,674; Ger. 504,886.

BENZOIN

Ger. 346,597.

BENZOPHENONE, SULFONIC AND CARBOXYLIC ACID DERIVATIVES

Ger. 344,266.

BENZOTETRONIC ACID, alpha-ACETYL-

Instead of methyl other alkyl or aralkyl and aryl groups such as ethyl, butyl, amyl, phenylethyl, phenyl or p-chlorophenyl may be present.-Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTETRONIC ACID, alpha-CARBOXYLIC ACID AMIDE

The methyl, ethyl, propyl, butyl or amyl N-derivative may also be used.-Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTETRONIC ACID, alpha-CARBOXYLIC ACID ANILIDE

Instead of the phenyl radical there may be used alkyl phenyl in which the alkyl group may vary from methyl to amyl, unsubstituted or substituted amino-phenyl, mono- or dichlorophenyl, alpha or beta-naphthyl, cyclohexyl, methyl cyclohexyl, diethylaminoethylene and similar radicals.-Brit.

478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTETRONIC ACID, alpha-CARBOXYLIC ACID BENZYL ESTER

The chlorobenzyl, phenylethyl or alkyl radicals from methyl to amyl may also replace the benzyl group.-Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTETRONIC ACID, alpha-CARBOXYLIC ACID GUANIDIDE

Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTETRONIC ACID, alpha-CARBOXYLIC ACID PHENYLHYDRAZIDE

The phenyl radical may also be substituted by one or more halogen atoms.-Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTETRONIC ACID, alpha-CARBOXYLIC ACID PIPERIDIDE

The nitrogen atom may bear other divalent cycloalkyl radicals, nicotine or anabasine being employed in the place of piperidine.-Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTETRONIC ACID, alpha-CARBOXYLIC ACID UREIDE

Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

BENZOTHIAZOLE, 2-AMINO-

BENZOTHIAZOLE, 2-AMINO-6-CHLORO-

BENZOTHIAZOLE, 2-AMINO-6-ETHOXY-

Brit. 407,691.

BENZOTHIAZOLE, 1-AMINO-5-ETHOXY-, FLUOSILICATE.

Brit. 391,141.

BENZOTHIAZOLE, 2-AMINO-6-HYDROXY-

BENZOTHIAZOLE, 2-AMINO-4-METHYL-

BENZOTHIAZOLE, 2,5-DIAMINO-

BENZOTHAIAZOLE, 2-HYDROXY-

BENZOTHAIAZOLE, 2-MERCAPTO-

Brit. 407,691.

BENZYL ALCOHOL

In the mothproofing of wool and fur, use is made of a solution of a mothproofing agent in an organic solvent comprising a principal solvent and a second solvent or solvent-mixture which is more difficultly volatile. This second solvent prevents the discoloration of dark materials due to the deposition of white mothproofing material. Benzyl alcohol is suitable for this purpose.-Brit. 330,598; Ger. 488,138.

Mothproofing products are made by condensing benzyl alcohol with a phenolsulfonic acid, Brit. 334,886; or with p-chlorophenol, Ger. 542,069.

BENZYL ALCOHOL, 5-CHLORO-2-HYDROXY-

Condensed with p-chlorophenol to form 2,2'-dihydroxy-5,5'-dichlorodiphenyl-methane, a compound useful for mothproofing wool.-Brit. 333,561.

BENZYL ALCOHOL, 3,5-DICHLORO-2-HYDROXY-

A mixture of 3,5-dichloro-2-hydroxy benzyl alcohol and p-chlorophenol is condensed with formaldehyde and then sulfonated to form a mothproofing product.-Brit. 337,808.

Condensed with p-chlorophenol to form trichloro-dihydroxydiphenylmethane, which is used for mothproofing wool.-Brit. 333,561; Ger. 513,387. This product sulfonated is also used.-Fr. 39,337.

BENZYL ALCOHOL, p-METHYL-

The condensation product of p-methylbenzylalcohol and p-chlorophenol is used for mothproofing wool.-Ger. 542,069.

BENZYL ALCOHOL, TRICHLORO-

Trichlorobenzylalcohol is condensed with beta-naphthol in concentrated sulfuric acid to form a mothproofing product. A woolen fabric is rendered permanently mothproof by applying thereto 2 percent of this compound. Esters or ethers of trichlorobenzyl alcohol may be similarly used.-Brit. 334,886; Ger. 534,338.

BENZYLAMINE, 5-CHLORO-2-HYDROXY-N-(2-METHYL-4-sec-OCTYLCYCLOHEXYL)-

Brit. 497,214; Fr. 48,395; 1st addition to 802,508.

BENZYLAMINE FLUOSILICATE

U. S. 2,075,359; 1,917,463.

BENZYL CHLORIDES, CHLORO-

Condensed with phenolsulfonic acids to form mothproofing products.-Brit. 334,886.

BENZYL ESTERS

May be condensed with phenolsulfonic acid to form mothproofing products.-Brit. 334,886.

BENZYL ETHERS, HYDROXY-

A mixture of two hydroxydibenzyl ethers, the nuclei of which still contain a small amount of an omega-chloromethyl group, are obtained by the condensation of paraformaldehyde and 2,4,6-trichlorophenol. The product is efficacious in combating moths and other textile pests.-Brit. 383,493; Ger. 548,822; U. S. 1,971,436.

BERYLLIUM SALTS

Animal and vegetable fibers are rendered waterproof and insect-proof by treating them with an alkaline liquid, passing the wet fibers through a solution of a water-soluble soap and thereafter passing them through a solution of a glucinum (beryllium) salt.-Brit. 403,957.

BETAINE FLUOSULFONATE

U. S. 1,448,276.

BETAINE HYDROCHLORIDE

Ineffective.--Jackson and Wassell (18).

BIBENZYL

A solution of 10 parts by weight of bibenzyl in 90 parts by weight of solvent naphtha killed 90 to 100 percent of moth larvae placed in a pillow and sprayed.--U. S. 2,005,797.

BILE SALTS

Bile salts may be employed in a soluble fluoride mothproofing liquid to lower the surface tension and facilitate the penetration of the liquid into the fibers to which it is applied.--U. S. 1,901,960.

BI-o-CRESOL, TRIBROMO-

Ger. 520,184.

6,6'-BIMETANILIC ACID, N,N'-BIS(3,4-DICHLOROPHENYLSULFONYL)-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

o,o'-BIPHENOL

Wool is treated with a 10 percent solution of o,o'-dihydroxydiphenyl in a mixture of cyclohexanone and benzine and after thorough wetting is centrifuged to such an extent that after drying 3 percent of the dihydroxydiphenyl remains on the wool. The same effect is attained by spraying a solution of o,o'-dihydroxydiphenyl uniformly on the wool, so that 3 percent of the same becomes homogeneously incorporated.--Brit. 333,584; Ger. 520,184.

BIPHENOL, BIS(p-CHLOROBENZENESULFONIC ACID) ESTER OF

Brit. 491,434; U. S. 2,148,928.

o,o'-BIPHENOL, DIBROMODICHLORO-

o,o'-BIPHENOL, DICHLORO-

Brit. 333,584; Ger. 520,184.

o,o'-BIPHENOL, 3,3',5,5'-TETRABROMO-

100 kgs. of wool are thoroughly wetted with a solution of 2 kgs. of 3,5,3',5'-tetrabromo-2,2'-dihydroxydiphenyl in exactly the necessary quantity of caustic soda made up to 1,000 liters of water, working either at the ordinary temperature or at an elevated temperature. Then dilute acid, for example, formic acid or sulfuric acid, is added until a test portion of the solution no longer becomes cloudy on the further addition of acid, after which the material is centrifuged and dried. The material is now mothproof.-Brit. 333,584; Ger. 520,184.

o,o'-BIPHENOL, 3,3',5,5'-TETRACHLORO-

100 kgs. of wool are dyed in the customary manner with 2 kgs. of 3,5,3',5'-tetrachloro-2,2'-dihydroxydiphenyl, 1 percent of alizarine-saphirol S E (Schultz, Farbstofftabellen 1914 No. 858), and 15 percent of sodium bisulfate. After rinsing and drying the material is completely mothproof.-Brit. 333,584; Ger. 520,184.

BIPHENYL

A solution of 10 parts by weight of biphenyl in 90 parts by weight of solvent naphtha killed 90 to 100 percent of moth larvae placed in a pillow and sprayed.-U. S. 2,005,797.

Ineffective when applied to wool in an alcoholic solution.-Brit. 333,583; Fr. 670,674; Ger. 304,886.

BIPHENYL, CARBOXYLIC AND SULFONIC ACID DERIVATIVES

Ger. 344,266.

BIPHENYL, CHLOROXYDROXY-

An insecticide for combating moths contains a chlorohydroxydiphenyl.-U. S. 1,977,412.

BIPHENYL COMPOUNDS

Materials liable to damage from moths are treated with a solution containing a compound free from hydroxyl groups of the general formula $C_6H_5XC_6H_5$ wherein X represents an atom of oxygen or sulphur.-Brit. 502,320

Compounds of the general formula $C_6H_5-(X-S-X')_n-C_6H_5$ in which X and X' represent hydrogen or alkyl groups and n represents a whole number in solution in an organic solvent are used as mothproofing materials.-U. S. 2,005,797.

BIPHENYL, 4,4'-DIFLUORO-

U. S. 1,955,891.

A 2 percent by weight solution in alcohol, is used for mothproofing wool.-Brit. 333,583; Fr. 670,674; Ger. 504,886.

BIPHENYL, 2-FLUORO-

BIPHENYL, 4-FLUORO-

U. S. 1,955,891.

BIPHENYL, HYDROXY-, HALOGENATED

These compounds, substituted at a carbon atom by a hexyl, octyl, decyl, dodecyl, tetradecyl, hexadecyl or octadecyl residue are used as mothproofing agents.-Brit. 474,600.

2,4,4'-BIPHENYLTRIAMINE, N,N',N''-TRIS(p-CHLOROPHENYLSULFONYL)-

Brit. 324,962; U. S. 1,962,276.

BIPSEUDOCUMENYL

Ger. 520,184.

BISMUTH NITRATE, BASIC

A mothproofing composition is made by mixing 1,000 grams white soap, 125 grams potassium carbonate, 250 grams blanc-d'Espagne (basic bismuth nitrate) 1,000 grams white arsenic and 1 liter of water.-Fr. 545,930.

BISMUTH SALTS

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a bismuth salt.-U. S. 1,799,047.

Water soluble salts of certain metals (bismuth included) are used for precipitating casein in fabrics in order to mothproof them.-U. S. 1,688,717.

BISMUTHAL

A mixture of bismuth phosphate and sodium salicylate.

Ineffective.-Jackson and Wassell (18).

BISMUTHINE, BROMODIETHYL-

Wool is mothproofed by immersing it in a 3 percent solution of a mixture of tri- and di-ethylbismuth bromides in acetone.-U. S. 1,766,819.

BISMUTHINE, BROMODIPHENYL-

U. S. 1,766,819.

BISMUTHINE, DIBROMOPHENYL-

Brit. 303,092.

BISMUTHINE, TRIETHYL-, DIBROMIDE

Wool is mothproofed by immersing it in a 3 percent solution of a mixture of tri- and di-ethylbismuth bromides in acetone.-Brit. 303,092; U. S. 1,766,819.

BISMUTHINE, TRIPHENYL-

Brit. 303,092; Ger. 485,646; U. S. 1,766,819.

BISMUTHINE, TRI-p-TOLYL-

Brit. 303,092; Ger. 485,646.

BITOLYL, SULFONIC AND CARBOXYLIC ACID DERIVATIVES

Ger. 344,266.

BITTER EXTRACT

A bitter extract is one of the materials which may be added to a solution containing sodium fluoride and sodium sulfate for mothproofing textiles.-U. S. 1,594,631.

BORAX

Borax (dusted) is ineffective against clothes moth larvae.-Scott, Abbott and Dudley (38); Back (5); Mullin (24); and White, Fulton and Cranor (42).

Used to solubilize casein, a constituent of an adhesive composition which may be used for mothproofing.-Brit. 463,725.

Used to put casein into solution in preparing an emulsion of petrolatum for mothproofing use.-U. S. 1,799,047.

BORIC ACID

A mothproofing composition comprises 10 parts of a salt of alkaloids from seeds of Lupinus with saponins of quillaia, 2 parts of alum, and 1 part of boric acid.-U. S. 1,885,292.

d-BORNEOL

An artificial cedar board or "moth wood" is prepared by impregnating wood with an odorous insecticidal material, such as d-borneol.-Ger. 470,458.

BOROACETIC ACID, CHLOROFLUORO-

Aust. 114,042; Brit. 298,538; Fr. 661,931; Ger. 490,221.

BOROACETIC ACID, FLUORO-

100 kgs. of wool are treated either dry or wet with cold or hot 2 percent potassium borofluoro-acetate with or without the addition of inorganic or organic acids or salts. Water or organic solvents, such as alcohol or acetone, can be used as solvents or diluents. The dry treatment can be carried out, for example, in the fulling vessel, the wet treatment in the dye bath or by the steeping or spraying process, according to the material or the method of manufacture. The materials thus treated are to a high degree protected against textile pests, for example, moths.-Aust. 114,042; Brit. 298,538; Ger. 490,221.

BOROACETIC ACID, TRIFLUORO-

This compound displays excellent protective action against textile pests.-Brit. 298,538. Its preparation from boric acid, glacial acetic acid, and aqueous hydrofluoric acid (45 percent HF) is described in Brit. 316,987.

BOROFORMIC ACID, FLUORO-

Aust. 114,042; Brit. 298,538; Fr. 661,931; Ger. 490,221.

BOROGLYCOLIC ACID, FLUORO-

BOROLACTIC ACID, FLUORO-

Ger. 490,221.

BORON FLUORIDE

Used to form addition compounds with methyl, ethyl, propyl, and butyl formates and acetates, ether and other organic compounds; which addition compounds are decomposed by water and give off toxic vapors used to fumigate verminous clothing.-Brit. 426,398.

BORON FLUORIDE, ORGANIC ACID DERIVATIVES

Wool, hair, fur, and the like are protected against textile pests by treating the material with a complex compound of boron fluoride and an organic carboxylic acid. Examples are fluoborformic, fluoboracetic, and fluorborchloroacetic acids. - Aust. 114,042; Brit. 298,538; Ger. 490,221.

BORON FLUORIDE, - ORGANIC COMPOUND ADDITION PRODUCTS

Mentioned as known mothproofing agents. - U. S. 1,955,891.

BORON TRIFLUORIDE

Wool is mothproofed with solutions of boron trifluoride or with solutions of its reaction products with organic materials in organic solvents. - Ger. 502,600. For example, 100 kg. of wool are steeped in a 1 percent solution of the addition product of boron trifluoride with acetophenone in benzine, centrifuged, and dried. - U. S. 1,757,222.

BORON TRIFLUORIDE, ADDITION COMPOUNDS WITH KETONES

Materials are rendered mothproof by treatment with an addition compound of boron trifluoride and a ketone. - Can. 292,416.

BOROOLEIC ACID, FLUORO-

BOROPROPIONIC ACID, FLUORO-

Ger. 490,221.

BRILLIANT GREEN

Wool dyed with brilliant green was very badly damaged by clothes moth larvae and black carpet beetle larvae. - Minaeff (22).

BRILLIANT YELLOW

Tests in feeding clothes moth larvae brilliant yellow are described by Mullin (24, 25).

BROMOCRESOL PURPLE

Ineffective. - Minaeff (22).

BROMOPHENOL BLUE

Ineffective. - Minaeff (22).

BROMOTHYMOL BLUE

Fabrics treated with bromothymol blue were badly damaged by clothes moth larvae. - Minaeff (22).

BROOM SEEDS

Seeds of Genista species.

A mothproofing material is prepared by extracting quillai bark and the seeds of lupines and broom with a dilute inorganic acid, (sulfuric acid excepted) neutralizing with sodium or magnesium carbonate, evaporating to sirupy consistency and adding sufficient sodium sulphate to make a dry powder. - Ger. 421,100.

BRUCINE

Materials treated in a 1.5 percent carbon tetrachloride solution of 3 parts brucine alkaloid and 3 parts phenyl salicylate for 10 minutes are mothproofed. - Brit. 327,009; Ger. 526,611.

Brucine has some mothproofing value, but insufficient for practical use. - Minaeff and Wright (23).

BRUCINE, ANILINE ACETIC ACID SALT

Used as a 2 percent aqueous solution. Also in the following mixture: 3 parts brucine anilide acetate, 6 parts anhydrous sodium sulfate, 2 parts tartar emetic, and 0.5 part saponin. A 1.5 percent solution of this mixture is used to treat animal fibers for about 20 minutes at 140° F. - U. S. 2,015,533.

BRUCINE, ANILINE SALT

Animal fibers are treated for from 10 to 20 minutes in a 1.5 percent naphtha solution of a mixture of 3 parts of brucine anilide and 5 parts of phenyl salicylate. After this treatment the fibrous material can be stored for an unlimited period in a damp place without being attacked by mildew or the larvae of moths. - U. S. 2,015,533.

BRUCINE, ANILINE FORMIC ACID SALT

BRUCINE, ANILINE HYDROCHLORIDE SALT

U. S. 2,015,533.

BRUCINE, ANILINE LACTIC ACID SALT

Used as a 2 percent aqueous solution. - U. S. 2,015,533.

BRUCINE, ANILINE LINOLEIC ACID SALT

BRUCINE, ANILINE LINOLENIC ACID SALT

Dissolves in dry solvents. - U. S. 2,015,533.

BRUCINE, ANILINE OLEIC ACID SALT

A 1.5 percent solution in naphtha is used to make animal fibers mothproof and mildew-proof. - U. S. 2,015,533.

BRUCINE, ANILINE PALMITIC ACID SALT

Dissolves in dry solvents. - U. S. 2,015,533.

BRUCINE, ANILINE RICINOLEIC ACID SALT

Dissolves in dry solvents. - U. S. 2,015,533.

BRUCINE, ANILINE STEARIC ACID SALT

A 2 percent solution in carbon tetrachloride is used to make

animal fibers mothproof and mildew-proof. - U. S. 2,015,533.

BRUCINE OLEATE

Materials treated in a 1.25 percent solvent naphtha solution of 4 parts brucine oleate and 6 parts phenyl salicylate for 15 minutes are mothproofed. - Brit. 327,009; Ger. 526,611.

BRUCINE SULFATE

Brucine sulfate may be applied as follows: (1) 4 parts brucine sulfate, 1 part saponin of guillaia, and 2 parts zinc sulfate. Materials are treated in a 1 percent water solution of the above for 30 minutes at 80° F. (2) 5 parts brucine sulfate, 2 parts saponin of guillaia, and 3 parts aluminum sulfate. Materials are treated in 1 percent water solution of the above for 20 minutes at 100° F. - Brit. 327,009; Ger. 526,611.

BUTADIENE DIOXIDE

Fr. 800,582; U. S. 2,202,169.

BUTANE, 1-CHLORO-2-NITRO-

Air saturated with the vapor of this fumigant killed 70 percent of black carpet beetle larvae exposed for 2 hours and 100 percent of those exposed for 3 hours. The corresponding mortalities of clothes moth larvae were 80 and 100 percent respectively. - U. S. 2,289,546.

1,3-BUTANEDIONE, 1-PHENYL-

Condensed with thiourea and o-chlorobenzaldehyde to form a product useful for mothproofing wool. - Ger. 547,057.

1,4-BUTANEDIONE, 1,4-BIS(4-CHLORO-2-HYDROXYPHENYL)-

Fr. 802,508.

1,4-BUTANEDIONE, 1,4-BIS(4-CHLORO-2-HYDROXYPHENYL)-, ETHERS AND
ESTERS OF

Brit. 495,761; Fr. 48,395; 1st addition to 802,508.

BUTANESULFONYL FLUORIDE

U. S. 2,114,577.

BUTANOL, p-tert-BUTYLPHENOXY-

BUTANOL, o-CYCLOHEXYLPHENOXY-

U. S. 2,134,001.

BUTYL ACETATE

The addition compounds of this with antimony chloride, boron fluoride, calcium chloride, magnesium chloride, and titanium chloride are decomposed by water and give off toxic vapors used to fumigate verminous clothing. - Brit. 426,398.

BUTYL ALCOHOL

In the mothproofing of wool and fur, use is made of a solution of a mothproofing agent in an organic solvent comprising a principal solvent and a second solvent or solvent-mixture which is more difficultly volatile. This second solvent prevents the discoloration of dark materials due to the deposition of white mothproofing material. Butyl alcohol is suitable for this purpose. - Brit. 330,598; Ger. 488,138.

Butyl alcohol is a suitable solvent for the following mothproofing materials:

Aldehyde-phenol condensation products. - Brit. 316,900.

Copper oleate. - Brit. 367,913.

Reaction products of boron trifluoride with organic materials. -

Ger. 502,600.

Butyl alcohol mixed with carbon tetrachloride is used as a solvent for the condensation products of aldehydes with p-chloro- or p-bromophenols, for example 2,2'-dihydroxy-5,5'-dichloro-diphenyl methane made by condensing p-chlorophenol and formaldehyde. - Aust. 118,640; Brit. 316,900; Ger. 503,256.

A mixture of 200 parts butyl alcohol and 1800 parts benzine is used as a solvent for fluoboracetic acid (2 percent solution) for mothproofing goods. - Ger. 490,221.

The reaction product of boron trifluoride with butyl alcohol is used to mothproof wool. - Ger. 502,600.

BUTYL ALCOHOL, REACTION PRODUCT OF, WITH PHENYLPHENOLS, SULFONATED

The sodium salt of the sulfuric acid derivative of the reaction product of substantially two molecular proportions of butyl alcohol and substantially one molecular proportion of a mixture of substantially 95 percent ortho hydroxy diphenyl and substantially 5 percent para hydroxy diphenyl may be employed in conjunction with soluble silicofluorides, soluble fluorides or mixtures of these with a resulting improvement in the mothproofing qualities thereof. - U. S. 2,010,443.

sec-BUTYL ALCOHOL

A composition of matter useful for mothproofing comprises a solution of a salt of xylyl guanidine in an organic solvent (c.g., petroleum naphtha) and a sufficient quantity of a substance chosen from the group consisting of secondary butyl alcohol and an alkyl ether of ethylene glycol to increase the solubility of the salt of

xylyl guanidine in the solvent. - U. S. 2,157,854.

n-BUTYLAMINE FLUOSILICATE

Brit. 391,141; U. S. 1,917,463; U. S. 2,075,359.

n-BUTYLAMINE, DI-, FLUOSILICATE

Used in a 1 percent aqueous solution. - U. S. 2,075,359.

n-BUTYLAMINE, TRI-, FLUOSILICATE

U. S. 2,075,359.

BUTYLENE OXIDE, COMPOUND WITH CALCIUM CHLORIDE

The addition compound of butylene oxide with calcium chloride, which is decomposed by water and gives off the vapor of butylene oxide, is used to fumigate verminous clothing. - Brit. 426,398.

BUTYLETHYLENIMINE

U. S. 2,202,169.

BUTYL FORMATE

Same as for butyl acetate. - Brit. 426,398.

BUTYL PHOSPHATE

Used mixed with an aryl sulfonamide in benzine, carbon tetrachloride or trichloroethylene solution. - Brit. 407,356.

BUTYRALDEHYDE

n-Butyraldehyde is condensed with thiourea and acetoacetic ester to form a product useful for mothproofing wool. - Ger. 547,057.

BUTYRALDEHYDE, 2-CHLORO-

Mentioned as a known insecticide. - U. S. 2,129,025.

CADE OIL

A constituent of the mothproofing solution described in Brit. 399,938.

CAFFEINE

Has some mothproofing value, but insufficient for practical use. Goods treated with a combination of caffeine with oleic acid were quickly damaged by clothes moth larvae. - Minaeff and Wright (23).

CADMIUM IODIDE, ADDITION COMPOUND WITH METHYL SULFIDE

Brit. 426,398.

CALCIUM ACETATE

Used to form insoluble salts with complex inorganic acids in mothproofing solutions. - Ger. 347,723.

CALCIUM CHLORIDE

An ingredient of "Pyromoth." - Back and Cotton (6).

Used to form addition compounds with methyl, ethyl, propyl and butyl formates and acetates, methylal, butylene oxide, etc., which are decomposed by water and give off toxic vapors used to fumigate verminous clothing. - Brit. 426,398.

CALCIUM FLUORIDE

Calcium fluoride mixed with antimony selenate is deposited on woolen cloth by soaking the cloth in a solution of calcium selenate and then in a solution of antimony trifluoride. Barium fluoride or strontium fluoride may be used in place of the antimony trifluoride. - U. S. 2,119,458.

CALCIUM FLUOSILICATE

May be used with calcium benzene sulfonate. - U. S. 2,291,473.

CALCIUM HYDROXIDE

Air-slaked lime dusted is ineffective against clothes moth

larvae. - Scott, Abbott and Dudley (38); Mullin (24); Back (5).

A constituent of the mothproofing solution described in U. S. 387,579.

CALCIUM SALTS

Ineffective. - Brit. 365,233; Fr. 707,840.

CALCIUM SELENATE

Calcium selenate when used alone is superior to other water soluble selenates. - U. S. 2,119,458.

CALCIUM SULFIDE

Used as a vulcanizing agent with rubber latex, an ingredient of an adhesive composition which may be used for mothproofing. - Brit. 463,725.

CAMPHOR

Camphor is a well-known clothes moth repellent and its use for this purpose is mentioned in the following patents: Brit. 19,688 of 1912; 173,536; 230,203; 413,445; Fr. 774,692; Ger. 258,405; 344,266; 353,682; 357,063; 503,256; Swed. 59,851; U. S. 1,097,406; 1,216,356; 1,562,510; 1,610,167; 1,655,540; 2,017,159; 2,184,147; also by Mullin (24, 25), Sachs (33, 35), Gershenfeld (16), Meckbach (21), Packard (27), Smith (39), Hecke (17), and Kingzett (19).

Camphor in closed places kills all stages of clothes moths. - Benedict (10).

Camphor may be used in tight chests and trunks for protecting clothing, but it is not as effective as naphthalene or paradichlorobenzene. - Back (5).

Camphor proved effective in varying degrees against the various

stages of the clothes moth, but was much less active than the different forms of naphthalene. - Scott, Abbott and Dudley (38).

Holders for camphor which permit its volatilization are described in U. S. 1,611,119 and 1,658,596.

A mixture of paradichlorobenzene and camphor is used for protecting furs and skins from moths. - U. S. 1,097,406.

Sulfur may be melted with camphor and beta naphthol for use against clothes moths. - Ger. 411,345.

An apparatus for vaporizing a camphor-naphthalene mixture for combating clothes moths is described in Ger. 330,492.

Camphor may be used with methyl formate-magnesium chloride and other addition compounds. - Brit. 426,398.

An artificial "Mottenholz" repellent to clothes moths is made by impregnating wood with an odorous insecticidal material, such as camphor. Dextro, laevo, or inactive camphor may be used. A suitable mixture consists of 45 kg. dextro-camphor, 30 kg. beta-naphthol, 5 kg. naphthalene, 10 kg. paraffin, 7 kg. resin or resin soap, 2 kg. menthol and 0.1 kg. oil-red BX. This is melted and used to impregnate boards, for example beechwood, in the usual way. - Ger. 470,458. Another mixture consists of 35 percent turpentine, 20 percent varnish, 35 percent camphor, and 15 percent beta-naphthol [sic]. - Ger. 481,679.

CAMPBOR, CHLORO-

A material for combating moths is made by combining chloro-camphor and paradichlorobenzene. - Swiss 201,548.

CAMPHOR OIL

Used to scent a mixture of allyl isothiocyanate and carbon tetrachloride. - Fr. 805,530.

CAMPHOR WOOD

The use of this wood in protecting wool against moths is referred to in Ger. 470,458.

Packard (27) quotes from Harris ". . .furs and other small articles can be kept by being sewed in bags with bits of camphor wood."

CANADA BALSAM

An adhesive composition which may be used for mothproofing contains:

Canada balsam - - - from 1/2 to 3 U. S. quarts

Isopropyl alcohol - from 1/2 to 4 U. S. quarts

Lime - - - - -from 3 to 25 lbs.

Sodium fluoride- - -from 3 to 12-1/2 lbs.

Casein - - - - -100 pounds

Brit. 463,725.

CAPRYLIC ACID

A carrier for a toxic substance. - Brit. 236,218; U. S. 1,634,792.

CARBANILIDE, THIO-

Ineffective. - Jackson and Wassell (18); Minaeff and Wright (23); Brit. 301,241; Fr. 664,151; Ger. 515,632; U. S. 1,748,579.

CARBAZIC ACID, BENZYLIDENEETHYLPHENYL-

Ger. 460,545.

CARBAZOLE

Carbazole, 6 percent in acetone, was effective in mothproofing fabric but 3 percent was ineffective and stained the fabric, forming a deposit on the surface.-Minaeff and Wright (23).

Sulfonic and carboxylic acid derivatives of carbazole are claimed for mothproofing purposes in Ger. 344,266.

CARBAZOLE, N-ACETYL-

Brit. 238,287; Ger. 460,545.

CARBAZOLE, ACETYLDICHLORO-

Brit. 238,287; Fr. 581,037; U. S. 1,562,510.

CARBAZOLE, BENZOYL-

Brit. 238,287.

CARBAZOLE, 3,6-DICHLORO-

Used as a 1/2 percent solution in alcohol.-Brit. 238,287.

CARBAZOLE, N-METHYL

CARBAZOLESULFONIC ACID, CHLORO-N-ETHYL-

Ger. 460,545.

CARBON DIOXIDE

May be used with an alkyl sulfofluoride as a fumigant.-U. S. 2,114,577.

CARBON DISULFIDE

Four to 6 pounds of carbon disulfide per 1,000 cubic feet of enclosed space should kill all moths and their larvae at temperatures above 65° F.-Back (5).

Listed as a clothes moth remedy.-Mullin (24,25); Fr. 670,674.

Tests with carbon disulfide are described by Titschack (40).

A mixture of 1 part cedar leaf oil with from 5 to 10 times as much carbon disulfide is used for fumigating clothing in a tightly closed vault.-U. S. 1,630,836.

Inferior to fluoroform for the fumigation of furniture infested with moths.-Brit. 333,583; Ger. 504,886.

A solvent for brucine anilide and its salts.-U. S. 2,015,533.

CARBON MONOXIDE

May be used with an alkyl sulfofluoride as a fumigant.-U. S. 2,114,577.

CARBON TETRACHLORIDE

Mentioned in Ger. 258,405; U. S. 2,091,075; and by Mullin (24,25).

When the temperature is 70° F. or above, good results in killing clothes moths with carbon tetrachloride should follow if the quantities given for carbon disulfide (4 pounds per 1,000 cubic feet) are trebled.-Back (5); Back and Cotton (6).

Insects and eggs in garments, rugs, furs, etc., are destroyed by fumigating with carbon tetrachloride mixed with an essential oil such as cedar-leaf, cedarwood, eucalyptus, pine, or pine-needle oil to mask the odor.-U. S. 1,630,836.

Used with an aqueous solution of magnesium fluosilicate.-U. S. 2,127,252.

A solvent for:

Aldehyde-phenol condensation products.-Brit. 316,900.

Alkyl sulfofluorides.-U. S. 2,114,577.

Allylthiocyanate.-Fr. 805,530.

Aromatic hydroxy compounds.-Brit. 495,639; 497,214; and their

ethers or esters.-Brit. 495,761.

Aryloxy alkylols.-U. S. 2,134,001.

Arylsulfonamides mixed with phosphoric acid esters.-Brit. 407,356; Fr. 42,266; Ger. 558,509; U. S. 1,955,207.

Boron trifluoride reaction products with organic materials.-Ger. 502,600.

Brucine and its salts. An example is a 2 percent solution of brucine anilide stearate in carbon tetrachloride.-U. S. 2,015,533. Another example is a 1.5 percent solution of 3 parts brucine and 1 part salol.-Brit. 327,009; Ger. 526,611.

Hexachloroethane.-Ger. 353,682.

Monophenyl di(o-xenyl)phosphate.-U. S. 2,128,189.

Phosphoric acid aryl esters.-Ger. 480,180; U. S. 1,748,675.

Sulfochlorides (e.g. 1,5-naphthalene-disulfochloride).-Ger. 449,126.

Thio compounds.-Brit. 340,419.

Thiourea compounds.-Brit. 326,567.

Cinchona alkaloids.-U. S. 1,615,843.

Used in admixture with petroleum naphtha as a solvent for dixylyl guanidine.-U. S. 2,157,854; in admixture with trichloroethylene or dichloroethylene as a solvent for halogenated phenols.-Brit. 474,600; and in admixture with butyl alcohol as a solvent for the condensation products of aldehydes with p-chloro- or p-bromo-phenols.-Aust. 118,640; Brit. 316,900; Ger. 503,256.

CARBOXYLIC ACIDS, AROMATIC SULFODI-

Esters of these have mothproofing properties.-Fr. 713,082.

CARBOXYLIC ACIDS

Ger. 344,266; 346,596.

Metal salts, Ger. 430,186; quaternary phosphonium salts, Ger. 506,987.

CARBOXYLIC ACIDS, o-HYDROXY-

These acids and derivatives thereof, in which the para position to the hydroxyl group is occupied by halogen or sulfur are used for protecting material against moth attack.-Brit. 274,425; Can. 280,549.

CARBOXYLIC ACIDS, HYDROXY-, SULFURIZED

Sulfurized hydroxy aromatic carboxylic acids, obtained by treating hydroxy carboxylic acids with chloride of sulfur, S_2Cl_2 , are mothproofing agents. These compounds may contain a sulfur bridge consisting of one, two, or three atoms of sulfur. Derivatives and condensation products of these compounds, e.g., amines, hydrazines, and the like, are also useful.-U. S. 1,734,862.

CARBOXYLIC ACIDS, HYDROXYAROMATIC-

Wool, feathers, hair, etc. are protected against moths by washing with soap with which an aromatic hydroxycarboxylic acid or a halogenated substitution product of such an acid has been incorporated.-Ger. 581,990.

CARBOXYLIC ACIDS, SULFO-, ESTERS

Fr. 735,959; Ger. 588,851.

CARNAUBA WAX

A solid mixture of this and cyclohexene oxide is used to fumigate clothes moth larvae.-U. S. 2,101,587.

CARROGEEN

Irish moss.

A constituent of a petrolatum emulsion used for mothproofing fabrics.-

U. S. 1,799,047.

CASEIN

Casein, put into solution with borax, is used with soap, carrogeen from Irish moss, and bentonite to emulsify petrolatum in water. Fabrics are made waterproof, mothproof, and mildewproof by treating with this emulsion and then with a solution of a rare earth salt.-U. S. 1,799,047.

Fabrics are mothproofed by precipitating casein upon them with an aqueous solution of a salt of a rare earth metal.-U. S. 1,688,717.

Used with Canada balsam.-Brit. 463,725.

CASTOR OIL, HYDROGENATED

The mixed acids or compounds in hydrogenated castor oil are combined with rare earth elements to form mothproofing compositions.-U. S. 1,739,840; Brit. 247,242.

CASTOR OIL, SULFONATED

Synonym: turkey red oil.

Used to facilitate wetting in a mothproofing solution. For example 2 parts of thiourea are dissolved in a mixture of 88 parts of water and 12 parts of acetone, to which .3 parts of sulfonated castor oil is added. The fabric is immersed in this solution, excess liquid pressed out and the material is air dried.-Brit. 301,421; Fr. 664,151; Ger. 515,632; U. S. 1,748,579.

Used to emulsify copper oleate in water.-Brit. 367,913.

CASTOR OIL, SULFURIZED, ALKYL ESTER

Twenty parts of bis-1,3-dichlorobenzene-4-sulfo-1,3-phenylene-dianide are emulsified in 80 parts of the alkyl ester of sulfurized castor oil. Wool treated in a solution of 20 parts of such a soap in 1000 parts of

water at 60° C. is cleaned and rendered mothproof at the same time.--

U. S. 2,082,188; 2,130,435; 2,184,951.

CEDAR

The common red cedar is Juniperus virginia.

Cedar chips and shavings are listed as moth preventives by Mullin (24,25); also referred to in Ger. 470,458.

Furs and other small articles can be kept by being sewed in bags with bits of red cedar or of Spanish cedar.--Packard (27). Cedar did not repel or harm the clothes moth at any stage.--Benedict (10).

Red-cedar chips and shavings, while not entirely effective in keeping the adult moths from laying eggs on the flannel treated, appeared to protect it from appreciable injury when used liberally. The chips and shavings showed practically no killing effect against eggs, or against the larvae when over one-fourth grown.--Scott, Abbott and Dudley (38).

Ineffective against adults or the half-grown to full-grown larvae of clothes moths and carpet beetles. They soon lose their value and often become valueless before they are purchased by the retailer.--Back (5).

A plaster composition repellent to moths or Dermestidae has the following composition: aromatic cedar dust 64 percent, gypsum hard wall plaster 33 percent, pure red oxide (or other coloring matter) 2 percent, creosote of wood tar 0.90 percent, cedar-leaf oil 0.10 percent.--U. S. 1,620,587.

A suspension of sulfur-bentonite is mixed with cedar sawdust and the mixture dried and molded to make tablets or sheets which may be employed as moth eradicators.--U. S. 1,795,364.

CEDAR LEAVES

Red cedar leaves, dried and placed in clothing, are worthless for clothes moth control.-Back (5); Mullin (24); and White, Fulton and Granor (42).

CEDAR-LEAF OIL

A constituent of the plaster composition described in U. S. 1,620,587.

Insects and eggs in garments, rugs, furs, etc. are destroyed by fumigating with carbon disulfide, carbon tetrachloride or p-dichloro-benzene mixed with cedar leaf oil to mask the odor. A preferred mixture consists of cedar leaf oil mixed with from 5 to 10 times as much carbon disulfide.-U. S. 1,479,704; 1,630,836.

CEDAR-WOOD OIL

Used to mask the odor of carbon disulfide, carbon tetrachloride or p-dichloro-benzene.-U. S. 1,630,836. Mentioned as a well-known moth repellent by Mullin (24), and in U. S. 1,610,167.

Cedar wood oil in upholstered furniture is of no value as a protection.-Back and Cotton (6).

A block of wood or compressed sawdust is impregnated with oil of cedar wood and coated with paraffin or wax to repel clothes moths and destroy their larvae.-U. S. 1,479,704.

CEDRENE

CEDRENOL

CEDROL

U. S. 1,479,704.

CELLULOSE

Wool is rendered mothproof by impregnating with an approximately 1 percent solution of cellulose in ammoniacal copper hydroxide and

subsequently precipitating the cellulose on the fibers by treatment with acid.-Ger. 576,411.

CELLULOSE, ACETYLATED

Cellulose is protected from mildew, bacteria, and other organisms by partially acetylating it either in its raw state or in the manufactured state such as fabrics and fishing nets or in the form of threads or fibers.-Brit. 399,952.

Wool is rendered mothproof by soaking it in an acetone solution of acetylcellulose, pressing, and drying.-Ger. 576,411.

CELLULOSE XANTHATE, SODIUM SALT

Wool is rendered mothproof by treating it with sodium cellulose xanthate and then precipitating the viscose with acid.-Ger. 576,411.

CERIUM ACETATE

Fabric is protected against moths, mildew, mold, and moisture by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and a solution of 66 pounds of cerium acetate in 250 gallons of water.-U. S. 1,921,926.

CERIUM CHLORIDE

Fabric such as canvas, is made waterproof, mothproof, and mildew-proof by dipping it first into an emulsion of petrolatum and then into a solution of 1 part of cerium chloride in 40 parts of water.-U. S. 1,799,047.

CERIUM FLUORIDE

This is precipitated upon woolen cloth by the interaction of solutions of antimony trifluoride and cerium sulfate.-U. S. 2,119,458.

CERIUM SALTS

Materials are mothproofed by impregnating them with cerium compounds the acid radical of which is a higher organic acid. The following cerium salts are mentioned: ricinoleate, resinate, stearate, oleate, linoleate, tungate and chloride. For example: woolen fabrics may be protected from attack by clothes moths, by first saturating the fabric with a hot 1.5 percent solution of sodium stearate, then wringing out and drying, thereafter passing through a warm 1/4 percent solution of cerium chloride, after which the fabric is passed through warm clear water to remove any excess of the cerium salt.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

Cerium oleate is ineffective for mothproofing.-Jackson and Wassell (18).

The chloride, acetate or any water soluble salt of cerium is used to precipitate casein in wool in order to mothproof it. For example, yarn is first treated with a solution of casein (1 part to 40 parts of water) and then with a solution of 1 part of cerium chloride in 40 parts of water. The goods are then wrung out, washed in water to remove excess of metallic salt, and dried.-U. S. 1,688,717.

CERIUM SULFATE

Woolen cloth is soaked in a 1 percent solution of antimony trifluoride, centrifuged, and then soaked in a 1 percent solution of cerium sulfate. As a result cerium fluoride and antimony sulfate are precipitated upon the cloth.-U. S. 2,119,458.

CHALK

A neutralizing agent for use with methyl formate-magnesium chloride and other addition compounds.-Brit. 426,398.

A diluent for alkyl sulfofluorides.-U. S. 2,114,577.

CHAULMOOGRIC ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium and thallium) of chaulmoogric acid are used for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

CHITIN, DEACETYLATED, FLUOSILICATE

A 25-gram sample of eiderdown blanket stock was soaked in 500 cc. of 0.5 percent aqueous deacetylated chitin lactate solution at 50° C. for 15 minutes. After wringing out the excess solution the eiderdown was then soaked in 500 cc. of an 0.5 percent aqueous fluosilicic acid solution at 25° C. for 15 minutes, after which it was wrung out and dried. It was heat-treated by pressing for 10 minutes with a hot iron. By this process the fluosilicate salt of the amine polymer was formed in situ on the fiber and subsequently insolubilized.-U. S. 2,163,104.

CHITIN, DEACETYLATED, ORGANIC ACID SALT

A composition of matter suitable for protecting materials against parasitic attack comprises a dispersion of a parasiticide in an aqueous solution of a salt of deacetylated chitin. Acids which may be employed include the following: formic, acetic, propionic, stearic, oleic, lauric, linoleic, acrylic, methacrylic, acetoacetic, adipic, maleic, malonic, acetylenedicarboxylic, lactic, glycolic, tartaric, phenylacetic, chloroacetic, mandelic, glutamic, benzoic, toluic, pyroric, 3-nitrophthalic, crotonic, benzenesulfonic, toluenesulfonic, naphthalenesulfonic, hydrochloric, hydrobromic, sulfurous, anthranilic, dichloroacetic, sebacic, citric, malic, and methylsulfuric acids.-U. S. 2,098,942.

CHLORAL

Mentioned as a known insecticide.-U. S. 2,129,025.

Condensation products of chloral with p-chlorophenol or p-bromophenol or their derivatives are used to protect textiles against Anthrenus vorax, Dermestes and other pests.-Brit. 316,900; Fr. 651,646.

CHLORAL, CONDENSATION PRODUCT OF, WITH PHENOL

Condensation products of 1 mole of chloral with 2 moles of a phenol are useful in mothproofing wool, hair, feathers, and the like.-Hung. 96,776.

CHLORINE

Gypsum blocks are soaked in a volatile disinfectant (for instance chlorine), then in molten naphthalene, and then in paraffin for use against moths.-Ger. 409,510.

CHLOROFORM

Chloroform is inferior to fluoroform as a fumigant of furniture infested with moths.-Brit. 333,583; Ger. 504,886.

A mixture of chloroform and alcohol is a solvent for triethanolamine silicofluoride.-Can. 381,574.

A solvent for:

Aryloxy alkylols.-U. S. 2,134,001.

Brucine anilide and its salts.-U. S. 2,015,533.

Monophenyl di(o-xenyl)phosphate.-U. S. 2,128,189.

Quaternary phosphonium salts.-U. S. 1,921,364.

CHROMIUM FLUORIDE

(a) Cow hair is made proof against attack by moth larvae and fungal rotting by saturating 100 parts of it with a solution of 3 parts of chromium fluoride dissolved in just sufficient water to cover the material, maintained at 180° F. then draining, hydroextracting, and drying at 155° F.

(b) Woolen or felted material is passed through a solution of chromium

fluoride, 1-1/4 parts to 160 parts of water, then passed between squeezing rollers so that 12 parts by weight of material retain 10 parts by weight of the solution, and dried at 155° F. The material finally contains 0.65 percent of chromium compound (i.e., basic chromium compounds, free oxides, and fluorides). Washing with water, either cold or at 160° F., removes practically none of the chromium compounds.-Brit. 413,445; Fr. 774,692; U. S. 2,184,147.

Woolen materials are treated with a solution containing chromium fluoride and antimony fluoride in the ratio of 4 to 1 at a temperature of 80° F., then squeezed or hydro-extracted, and dried at 155° F. The chromium oxides and hydroxides formed protect the fibers from attack by moth larvae. The antimony counteracts the pale green color imparted by chromium oxide alone.-Brit. 413,529.

Animal fibers are mothproofed by a double salt prepared by evaporation of a solution containing about four parts by weight of chromium fluoride and one part by weight of sodium antimony fluoride.-Brit. 454,458; Fr. 45,639; 1st addition to 774,692.

Four parts of chromium fluoride and 1 part of sodium antimony fluoride (antimony salt) are made into a double salt for use in mothproofing wool.-Fr. 47,613; 2nd addition to 774,692.

CHROMIUM SALTS

Chromium salts such as those used in dyeing do not appear seriously to impede clothes moth larvae.-Mullin (24); Brit. 173,536.

May be added to a mothproofing solution to form insoluble precipitates with complex inorganic acids.-Brit. 313,043; Ger. 347,723; 347,849.

A mothproofing composition comprises a mixture of alkaloidal salts

from seeds of Lupinus with saponins of quillaia, the sodium salt of an inorganic acid other than sulfuric, and a metal mordant which may be a chromium salt, e.g., sodium, potassium or ammonium bichromate, or chrome alum. An examples is: 10 parts of the alkaloidal salt and 1 part of chrome alum.-U. S. 1,885,292.

CHRYSOIDINE Y

Wool dyed with chrysoidine Y was very badly damaged by clothes moth larvae and black carpet beetle larvae.-Minaeff (22).

CINCHONA

Cinchona alkaloids are claimed for mothproofing purposes in U. S. 1,615,843 and Brit. 263,092. See also, Aust. 99,430 for use of quinine, and report by Back and Cotton (7) for tests of efficacy.

CINCHONA ALKALOIDS

Brit. 263,092; Fr. 625,380; Ger. 485,573; Swiss 125,139; and U. S. 1,615,843.

Cinchona alkaloid solutions are among the better mothproofing solutions tested.-Back and Cotton (6,7,8).

Of all the chemicals and mixtures studied, only the cinchona alkaloids and their derivatives constantly passed all the tests.-Jackson and Wassell (18).

Cinchona alkaloids are referred to as efficacious mothproofing materials.-U. S. 1,915,922.

Mentioned as effective mothproofing agents but ineffective against Anthrenus and Attagenus.-U. S. 1,955,207.

By mixing cinchona alkaloids with a solution of diphenyl in solvent naphtha a more permanent mothproofing effect is obtained than with diphenyl

alone.-U. S. 2,005,797.

CINCHONA FLUOSILICATE

Fluosilicates of cinchona derivatives are dissolved in a mixture of alcohol and gasoline to form a moth-proofing solution.-Can. 381,574.

CINCHONICINE HYDROCHLORIDE

CINCHONICINE OLEATE

Effective.-Jackson and Wassell (18).

CINCHONIDINE

Brit. 263,092; U. S. 1,615,843.

Cinchonidine has some mothproofing value, but insufficient for practical use. Its salts (sulfate, oxalate, salicylate and sulfosalicylate) were absolutely useless as mothproofing agents.-Minaeff and Wright (23).

CINCHONIDINE HYDROCHLORIDE

CINCHONIDINE HYDROFLUORIDE

CINCHONIDINE OLEATE

CINCHONIDINE SULFATE

Effective.-Jackson and Wassell (18).

CINCHONINE

Cinchonine or salts or derivatives thereof are claimed for mothproofing woolen goods in Brit. 263,092 and U. S. 1,615,843.

Cinchonine has some mothproofing value, but insufficient for practical use. Its salts, such as the sulfate, oxalate, salicylate or sulfosalicylate were absolutely useless as mothproofing agents.-Minaeff and Wright (23).

CINCHONINE HYDROCHLORIDE

CINCHONINE HYDROFLUORIDE

CINCHONINE OLEATE

CINCHONINE SULFATE

Effective.--Jackson and Wassell (18).

CITRIC ACID

An ingredient of mothproofing solutions.--Brit. 235,915; U. S. 1,634,791; 1,634,792 and 1,634,794. The preferred composition is 0.1 percent sodium oleate; 0.005 percent gelatine; 1 percent sodium fluoride and 0.004 percent citric acid.--Brit. 236,218.

CLAY

A suitable diluent for use with methyl formate-magnesium chloride and other addition compounds.--Brit. 426,398.

CLOVE OIL

To protect persons wearing summer clothes from the stings of gnats, the garments are treated for 15 to 20 minutes at 30-40° in a bath prepared as follows: In distilled water at 30-40° is dissolved 6 percent (based on the weight of the goods) of curd soap, olive oil soap or other good textile soap. In the warm soap solution there is emulsified 2 percent of oil of cloves or 1 percent of oil of cloves and 1 percent of bay oil and 0.1 percent of pyrethrum extract.--Ger. 557,760.

CLOVES

The dried flower buds of Caryophyllus aromaticus.

Cloves used as a dust proved effective in protecting flannel from moth infestation.--Scott, Abbott and Dudley (38).

Cloves are a preventive against clothes moths.--Mullin (24,25).

CLUPANODONIC ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium and thallium) of clupanodonic acid are used for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

COBALT CHLORIDE

Used to poison food of clothes moth larvae.-U. S. 2,086,046.

COCCERINIC ACID

Same as for clupanodonic acid.

COLLODION

Wool is rendered mothproof by treating it with a 1 percent solution of collodion, drying and denitrating the collodion with a 5 percent solution of sodium hydrosulfide.-Ger. 576,411.

COLOCYNTH

The pulp of the fruit of Citrullus colocynthus.

Colocynth pulp dusted is ineffective against clothes moth larvae.-Scott, Abbott and Dudley, (38); Back (5); Mullin (24).

Reference is made to the use of aqueous extracts of colocynth for mothproofing.-Ger. 488,307.

CONGO RED R

Wool dyed with Congo red R was badly damaged by clothes moth larvae and black carpet beetle larvae.-Minaeff (22).

CONIINE

Coniine is added to a drenching solution for hides to serve as a mothproofing agent.-Ger. 595,849.

COPPER ACETATE

Fabrics are rendered moth-, mildew-, mold-, and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in

125 gallons of water, and a solution of 66 pounds of copper acetate in 250 gallons of water.--U. S. 1,921,926.

COPPER CHLORIDE, ADDITION COMPOUND OF, WITH METHYL SULFIDE

Brit. 426,398.

COPPER HYDROXIDE, AMMONIACAL

Wool is rendered mothproof by impregnating with an approximately 1 percent solution of cellulose in ammoniacal copper hydroxide and subsequently precipitating the cellulose on the fibers by treatment with acid.--Ger. 576,411.

COPPER OLEATE

Timber, fabric or other materials subject to deterioration by fungi or attack by termites are protected by treatment with a copper-containing water emulsion. For example, 15 grams of copper oleate (containing about 10 percent Cu) is gently warmed with 750 cc. of dry butyl lactate until dissolved. On cooling, 825 grams of neutral 50 percent turkey red oil are added and well incorporated. This is emulsified in not exceeding 3 liters of water.--Brit. 367,913.

COPPER SALTS

Salts of copper are ineffective for mothproofing purposes.--Mullin (24).

Copper salts incorporated in fiber building board render it rotproof and termite proof.--U. S. 1,884,367.

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a copper salt.--U. S. 1,799,047.

An emulsion in water of a substantially water-insoluble copper salt

of a higher fatty acid is used for protecting fabrics against fungi and termites.-Brit. 367,913.

Copper salts of the halogen substituted phenols and cresols are effective for mothproofing fabrics and for protecting marine piling.-U. S. 1,085,783.

Copper acetate, copper chloride or other water soluble copper salts are used to precipitate casein in wool in order to mothproof it.-U. S. 1,688,717.

COTTON FIBERS

Mohair fabric for upholstering is protected from attack by moths by an unwoven backing of a thin flexible sheet of cotton fibers matted together and coextensive with the fabric.-U. S. 1,918,849.

COTTONSEED OIL, SULFONATED

Used as a wetting agent in a mothproofing solution.-U. S. 1,634,793.

COTTONSEED OIL ACIDS, CHLORINATED

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, titanium and thallium) of chlorinated cottonseed oil acids are used for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

COUMARIN

A solution of coumarin in alcohol is mentioned as having been proposed for the warding off^{of} moths and other insects.-Brit. 421,885; Ger. 485,101.

COUMARIN, 3-ACETYL-

COUMARIN, 4-BROMO-

COUMARIN, 3-BUTYL-

COUMARIN, 3-CHLORO-

COUMARIN, 3-ETHYL-

Less effective than dehydracetic acid, or benzotetronic acid derivatives for mothproofing wool.-Ger. 665,214.

COUMARIN, 4-FLUORO-

A solution of about 1 percent of 4-fluorocoumarin in alcoholic solution is used to protect clothes and carpets from the ravages of insects.-Brit. 421,885.

COUMARIN, 4-HYDROXY-

COUMARIN, 3-PHENYL-

3-COUMARINCARBOXYLIC ACID, ETHYL ESTER

Less effective than dehydracetic acid, or benzotetronic acid derivatives for mothproofing wool.-Ger. 665,214.

COUMARIN DERIVATIVES

Fluoro, bromo, chloro, alkyl, aryl and thio-coumarins are listed as known insecticides.-Brit. 478,398; U. S. 2,127,879.

CREATINE

Ineffective.-Jackson and Wassell (18).

CREOSOTE, COAL-TAR

Creosote is a recognized clothes moth remedy.-Mullin (24,25).

Creosote is used as a solvent for trichloronaphthalene or may be added to a mixture of 1 part 300° burning oil, 1 part paradichlorobenzene and 1 part hexachloronaphthalene used for mothproofing purposes.-Brit. 253,993.

Coal tar creosote incorporated in fiber building board renders it rot-proof, waterproof and termite proof. A pulp composition suggested is fiber, 1000 pounds; rosin size (bone dry basis), 20 pounds; creosote, 50 pounds; water, about 50,000 pounds. This is mixed and pressed out into boards which are especially desirable as a lining for mothproof closets.-U. S. 1,884,367.

CREOSOTE, WOOD TAR

Used for mothproofing curled hair.-U. S. 369,739.

A plaster composition repellent to moths or Dermestidae has the following composition: Aromatic cedar dust 64 percent; gypsum hard wall plaster 33 percent; pure red oxide (or other coloring matter) 2 percent; creosote of wood tar 0.90 percent; cedar-leaf oil 0.10 percent.-U. S. 1,620,587.

CRESOL

Cresylic acid is a recognized clothes moth remedy.-Mullin (24,25).

A kerosene-cresol mixture should be applied to floors infested with carpet beetles.-Gershenfeld (16).

CRESOL, AMYL-, CONDENSATION PRODUCT OF, WITH 5-ISATINSULFONIC ACID

Fr. 759,662; Swiss 165,377.

CRESOL, 4-(4-DECAHYDROMENAPHTHYLCYCLOHEXYL)-

Brit. 495,639; Fr. 48,395; 1st addition to 802,508.

CRESOL, TETRACHLORO-

A fabric first treated with a solution of the soda or potash salt of tetrachlorocresol and then treated with a solution of a metallic salt, such as lead, zinc, calcium, barium or aluminum, which will yield a precipitate within the pores of the fabric, is made fireproof and mothproof.-U. S. 1,085,783.

m-CRESOL

The condensation product of triphenylphosphine oxide with m-cresol is useful for mothproofing wool.-Brit. 326,137; Ger. 521,205.

m-CRESOL, p-CHLOROBENZENESULFONIC ACID ESTER

U. S. 2,148,928.

m-CRESOL, 2-sec-AMYL-4-CHLORO-

Brit. 474,600.

m-CRESOL, 4-CHLORO-

Wool is mothproofed with the condensation product of this with triphenylphosphine oxide.-Ger. 521,205; or with certain aldehydes.-Brit. 316,900.

m-CRESOL, 4-CHLORO-, CONDENSATION PRODUCT OF, WITH 5-ISATINSULFONIC ACID

Fr. 759,662; Swiss 165,032.

m-CRESOL, 6-CHLORO-

The condensation products of this compound with the following compounds are used for mothproofing wool: Triphenylphosphine oxide.-Brit. 326,137.

Formaldehyde.-Ger. 503,256.

o-Sulfobenzaldehyde.-Brit. 335,547.

5-Isatinsulfonic acid.-Brit. 424,967; Ger. 641,625; U. S. 2,070,353.

N-Benzylisatinsulfonic acid.-Swiss 169,551, N-(ortho-chlorobenzyl)-isatinsulfonic acid.-Brit. 424,972.

N-Benzylisatinsulfonic acid, N-(o-chlorobenzyl)isatinsulfonic acid or N-oxyethyl-5-isatinsulfonic acid.-Fr. 43,866; 1st addition to 759,662.

6-Chloro-5-isatinsulfonic acid.-U. S. 2,070,352.

N-Oxyethyl-5-isatin-sulfonic acid, or N-benzylisatinsulfonic acid or N-(ortho-chlorobenzyl)isatinsulfonic acid.-Brit. 424,972.

m-CRESOL, 4-CHLORO-2-sec-HEPTYL-

Brit. 474,600.

m-CRESOL, 4-CHLORO-2-ISOAMYL-

Fr. 802,508.

m-CRESOL, 4-CHLORO-2-ISOAMYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395; 1st addition to 802,508.

m-CRESOL, 4-CHLORO-2-ISOHEPTYL-

Fr. 802,508.

m-CRESOL, 4-CHLORO-2-ISOHEPTYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395; 1st addition to 802,508.

m-CRESOL, 4-CHLOROISOOCXYL-

Fr. 802,508.

m-CRESOL, 4-CHLOROISOOCXYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395; 1st addition to 802,508.

m-CRESOL, 4-CHLORO-sec-OCTYL-

Brit. 474,600.

m-CRESOL, 4,6-DICHLORO-2-ISOHEPTYL-

Fr. 802,508.

m-CRESOL, 4-ISOPROPYL-

The condensation product of triphenylphosphine oxide with this compound is useful for mothproofing wool.-Brit. 326,137.

m-CRESOL, 2,4,6-TRICHLORO-, CONDENSATION PRODUCT OF, WITH 4-FORMYLBENZENE-SULFONIC ACID

Ger. 548,822.

o-CRESOL

o-Cresol is condensed with cyclohexanone to form 4,4'-dihydroxy-3,3'-dimethyldiphenyl-1,1'-cyclohexane, Brit. 310,825, which is used for mothproofing according to Brit. 326,451.

The condensation product of triphenylphosphine oxide with o-cresol, is used to mothproof wool.-Brit. 326,137; Ger. 521,205.

A mixture of o-cresol and dinitro-o-cresol (dissolved in an excess of sodium carbonate) is used to protect cellulosic materials against mildew, termites, etc.-Fr. 677,340.

o-CRESOL, p-CHLOROBENZENESULFONIC ACID ESTER

U. S. 2,148,928.

o-CRESOL, AMYL-

Condensation products of this compound with the following compounds are used for mothproofing: 5-Isatinsulfonic acid.-Ger. 641,625; N-Oxyethyl-5-isatinsulfonic acid.-Fr. 43,866; 1st addition to 759,662.

o-CRESOL, 4-AMYL-

Condensation products of p-amyl-o-cresol with 5-isatinsulfonic acid.-Brit. 424,972; 424,967; U. S. 2,070,351, and with N-oxyethyl-5-isatinsulfonic acid are mothproofing agents.

o-CRESOL, 3-CHLORO-

May be condensed with formaldehyde or with o-benzaldehydesulfonic acid to form products useful for mothproofing wool.-Brit. 330,894; Fr. 681,795; Ger. 506,989; 536,551; U. S. 1,906,890.

The condensation product of triphenylphosphine oxide with 3-chloro-o-cresol is used for mothproofing wool.-Brit. 326,137; Ger. 521,205.

o-CRESOL, 4-CHLORO-

Condensation products of 4-chloro-o-cresol with formaldehyde, p-chlorobenzaldehyde, o-sulfobenzaldehyde, or other aldehydes are used to protect textiles against Anthrenus vorax, Dermestes and other pests.-Fr. 651,646.

Condensed with an aldehyde (except aromatic hydroxyaldehydes) to form a product useful for mothproofing wool.-Brit. 316,900.

The condensation product of 4-chloro-o-cresol and p-chlorobenzyl chloride is used for mothproofing wool.-Ger. 542,069.

o-CRESOL, 5-CHLORO-

May be condensed with an aldehyde, such as formaldehyde or o-benzaldehydesulfonic acid, to form products useful for mothproofing.-Brit. 330,894; Ger. 536,551; U. S. 1,906,890.

May be condensed with p-chlorobenzaldehyde.-U. S. 1,880,566.

o-CRESOL, 6-CHLORO-

The condensation product obtained from formaldehyde and 6-chloro-o-cresol is used for mothproofing.-Aust. 124,284; U. S. 1,906,890.

o-CRESOL, 4,6-DICHLORO-

May be condensed with p-benzaldehydesulfonic acid.-Brit. 383,493.

o-CRESOL, 4,6-DICHLORO-, CONDENSATION PRODUCT OF, WITH 4-FORMYLBENZENE-SULFONIC ACID

Ger. 548,822.

o-CRESOL, 4,6-DICHLORO-alpha-PHENYL-

Ger. 544,293.

o-CRESOL, DINITRO-

Dinitro-o-cresol is dissolved in an excess of sodium carbonate. To this solution is added the necessary quantity of o-cresol or tricresol. The resulting mixture is employed in preserving cellulosic materials from rodents, insects, etc.-Fr. 677,340.

o-CRESOL, 4-DODECYL-

Fr. 802,508.

o-CRESOL, 4-DODECYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395; 1st addition to 802,508.

o-CRESOL, alpha-MERCAPTO-

This is condensed with o-benzaldehydesulfonic acid or other aromatic aldehyde- or ketone-sulfonic acid to form water-soluble thio-acetal sulfonic acids useful for mothproofing textiles.-Brit. 492,938.

p-CRESOL

p-Cresol may be condensed with the following compounds to make products useful for mothproofing wool:

Triphenylphosphine oxide.-Brit. 326,137; Ger. 521,205.

p-Chlorobenzaldehyde. The condensation product is then chlorinated or brominated.-Brit. 338,126.

Formaldehyde or o-benzaldehydesulfonic acid.-Aust. 124,284; Fr. 681,795; Brit. 330,893.

Aralkyl compounds. The condensation products are subsequently sulphonated.-Brit. 334,886.

p-CRESOL, p-CHLOROBENZENESULFONIC ACID ESTER

Brit. 491,434; U. S. 2,148,928.

p-CRESOL, CONDENSATION PRODUCT OF, WITH 5-CHLORO-2-HYDROXY-alpha,alpha'-m-XYLENEDIOL

Ger. 542,067.

p-CRESOL, 2,6-BIS(5-CHLORO-2-HYDROXYBENZYL)-

Made by condensing 16.8 parts of 2,6-dimethylol-4-methylphenol and 28.3 parts of p-chlorophenol.-Ger. 542,068.

p-CRESOL, 2,6-BIS(5-CHLORO-2-HYDROXY-3-METHYLBENZYL)-

Made by condensing 11.2 parts of 2,6-dimethylol-4-methylphenol and 20.9 parts of 4-chloro-2-methylphenol.-Ger. 542,068.

p-CRESOL, 2-CHLORO-

A mixture of 3-chloro-4-cresol with 6-chloro-3-cresol is condensed with o-sulfobenzaldehyde to form products useful for mothproofing wool.-Brit. 335,547.

The condensation product of triphenylphosphine oxide with this cresol is used for mothproofing wool.-Brit. 326,137; Ger. 521,205.

2-Chloro-p-cresol is condensed with o-benzaldehydesulfonic acid to form a product useful for mothproofing wool.-Brit. 330,893; Fr. 681,795; Ger. 506,989.

p-CRESOL, 2,2'-HEXAMETHYLENEDI-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 802,508; 48,395; 1st addition to 802,508.

CRESOLS

Tricresol is employed in the preservation of cellulosic materials.-Fr. 677,340.

CRESOLS, CHLORINATED

May be condensed with p-benzaldehydesulfonic acid.-Brit. 383,493; Ger. 537,768; U. S. 1,971,436.

CRESOLS, HALOGENATED

These compounds, substituted at a carbon atom by a hexyl, octyl, decyl, dodecyl, tetradecyl, hexadecyl or octadecyl residue are used as mothproofing agents.-Brit. 474,600.

CRESOTIC ACID, CHLORO-

Furs are mothproofed by treating them with a dry powder consisting of talc containing 5 percent chlorocresotinic acid.-Aust. 114,458; Dutch 20,526; Fr. 636,434; Ger. 469,256.

2,3-CRESOTIC ACID, SULFURIZED

2,3-CRESOTIC ACID, 5-BROMO-

2,3-CRESOTIC ACID, 5-CHLORO-

U. S. 1,734,682.

Animal fibers are mothproofed by the application of a water soluble protective agent, e.g., 3-methyl-5-chloro-2-oxy benzoic acid, together with a lubricant used in one of the manufacturing steps.-Brit. 453,053.

2,5-CRESOTIC ACID

100 parts by weight of wool are mothproofed by 5 parts p-cresotinic acid, 5 parts sulfuric acid and 15 parts calcined Glauber's salt in solution.-Fr. 518,821; Ger. 344,266.

2,5-CRESOTIC ACID, SULFURIZED

U. S. 1,734,682.

CROTONALDEHYDE

Ineffective.-Jackson and Wassell (18).

CROTON OIL

A solvent for naphthalene derivatives and other insecticides used to impregnate leather.-Ger. 615,759.

CUBE

A chlorinated hydrocarbon extract of cube is used as a mothproofing composition.--Can. 338,896.

CUPREINE

U. S. 1,615,843.

CYCLOHEXANE, 1,1-BIS(4-HYDROXYPHENYL)-

A 10 percent by weight solution of this product in a mixture of 30 parts cyclohexanone and 70 parts ligroin is used for mothproofing wool.--Fr. 681,795; Ger. 530,331; Brit. 326,451.

CYCLOHEXANE, 1,1-BIS(4-HYDROXYPHENYL)-4-METHYL-

CYCLOHEXANE, 1,1-BIS(4-HYDROXY-m-TOLYL)-

Brit. 326,451.

CYCLOHEXANOL

Used as a difficultly volatile solvent to prevent the discoloration of dark materials due to the deposition of white mothproofing material.--Brit. 330,598; Ger. 488,138.

A solvent for the reaction products of boron trifluoride with organic materials.--Ger. 502,600.

CYCLOHEXANONE

Condensation products of cyclohexanone with the following are used to mothproof wool:

o-Chlorophenol or guaiacol.--Fr. 681,795; Ger. 530,331.

Dichlorobenzyl mercaptan.--Brit. 491,182; Fr. 829,834.

Phenol or o-cresol.--Brit. 326,451.

Cyclohexanone has been used in proprietary mothproofing solutions.--Back and Cotton (6,7,8).

Cyclohexanone is a suitable solvent for the following mothproofing products:

Arylsulfonamides.-U. S. 1,962,276.

The condensation product of thiourea, p-chlorobenzaldehyde, and acetoacetic ester.-Ger. 547,057.

Organic fluorine compounds.-Brit. 333,583; Fr. 670,674; Ger. 504,888.

Salts of selenious acid with organic bases, e.g., with ethylenediamine.-U. S. 1,903,864.

Thiourea compounds.-Brit. 326,567.

In the process of mothproofing wool and fur a mothproofing agent is used in an organic solvent comprising a principal solvent and a second solvent or solvent-mixture which is more difficultly volatile. This second solvent prevents the discoloration of dark materials due to the deposition of white mothproofing material. Cyclohexanone is suitable for this purpose.-Brit. 330,598; Ger. 488,138.

Cyclohexanone is used to prevent the efflorescence of aromatic hydroxy mothproofing compounds on dark materials.-Brit. 495,639; 497,214.

A mixture of cyclohexanone and ligroin is used as a solvent for:

Phenol-cyclohexanone condensation products.-Brit. 326,451.

p-Chlorophenol-formaldehyde condensation products.-Brit. 316,900.

4,4'-Dihydroxydiphenylcyclohexane.-Fr. 681,795; Ger. 530,331.

2,2'-Dihydroxy-5,5'-dichlorodiphenylmethane.-Aust. 118,640; Ger. 503,256.

Trichlorodihydroxydiphenylmethane.-Ger. 513,387.

A mixture of cyclohexanone and benzine is used as a solvent for o,o'-dihydroxydiphenyl in mothproofing wool.-Brit. 333,584; Ger. 520,184. For example, wool is treated with a 10 percent solution of o,o'-dihydroxydiphenyl in a mixture of cyclohexanone and benzine and after thorough wetting is centrifuged to such an extent that after drying 3 percent of the dihydroxydiphenyl remains on the wool.

CYCLOHEXANONE, CONDENSATION PRODUCT OF, WITH DICHLORO- α -TOLUENETHIOL
Brit. 491,182.

CYCLOHEXANONE, METHYL-

The product obtainable by condensing the mixture of the three isomeric methylcyclohexanones with phenol may be used for mothproofing fur, hair, feathers and the like.-Brit. 326,451; Fr. 681,795; Ger. 530,331.

CYCLOHEXANONE, 4-METHYL-

Condensed with phenol to form 4,4'-dihydroxy-1,1'-diphenyl-4"-methylcyclohexane, (Brit. 310,825) which is used for mothproofing.-Brit. 326,451.

CYCLOHEXENONE

The vapor of cyclohexene oxide at a concentration of 1/2 pound per 1,000 cubic feet of enclosed space killed clothes moth larvae in 2 days; at 2 pounds/1,000 cubic feet it killed them in 6 hours.-Fr. 800,582; U. S. 2,101,587. Used to combat clothes moths.-U. S. 2,202,169.

CYCLOHEXYLAMINE FLUOSILICATE

CYCLOPENTYLAMINE FLUOSILICATE

U. S. 1,917,463.

DATURA EXTRACT

Hung. 96,941.

DEHYDROACETIC ACID

Two parts of dehydroacetic acid in 98 parts of alcohol make a mothproofing solution which also is effective as a spray against flies and walking sticks. The two methyl groups in dehydroacetic acid can also be replaced by one or two phenyl groups.-Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

DERRIS EXTRACT

Can. 338,897.

The powdered derris root is preferably extracted with petroleum naphtha boiling between approximately 300 and 400° F.-U. S. 1,854,948.

DEXTRIN

A constituent of an adhesive mothproofing composition.-Brit. 463,725.

DIATOMACEOUS EARTH

A diluent for solid wax-cyclohexene oxide mixtures.-U. S. 2,101,587.

DIAZOAMINO COMPOUNDS

Diazoamino compounds of the probable general formula: $R-N=N-NHR_1(SO_3H)_n$, wherein R stands for the radical of a diazotizable amine suitable for producing azodyestuffs, and the benzene nucleus R_1 may be further substituted by substituents of the group consisting of alkyl, alkoxy and halogen are intended for combating insect pests.-U. S. 1,871,850.

DIAZONIUM SALTS

The diazonium salts of complex metallohydrofluoric acids, especially of titanic dihydrohexafluoride, are insecticides.-U. S. 1,825,729.

p-DIBENZODIOXIN

Brit. 502,320.

DIBENZOFURAN

DIBENZOFURAN, AMYL-

DIBENZOFURAN, CHLORO-

Brit. 502,320.

DIBENZOTHIOPHENE

Brit. 502,320; Swiss 203,306.

DIDYMIUM SALTS

The higher organic acid salts of didymium are claimed for mothproofing. The following salts are specified: ricinoleate, resinate, stearate, oleate, linoleate, and tungstate.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

DI-n-BUTYLAMINE FLUOSILICATE

A wool-preservative, disinfectant, and antiseptic.-Brit. 391,141; U. S. 1,917,463.

Wool, fur, hair, hide, felt, and the like which have been immersed in a 1 percent aqueous solution of di-n-butylamine fluosilicate and dried are mothproofed.-Brit. 396,064.

DIETHYLALKYLENIMINIUM COMPOUNDS, HALIDES

Fr. 800,582; U. S. 2,202,169.

For example, woolen goods are impregnated with a 5 percent solution of diethylethyleneiminium chloride, pressed, lightly dried and heated 8 hours at a relative humidity of the air of 75 percent.

DIETHYLGLYCOL PHOSPHATE

U. S. 1,955,207.

DIGUANIDINE ALKALI METAL FERROCYANIDE

Diguanidine disodium- and dipotassium ferrocyanides are useful as moth larva repellents.-U. S. 2,289,547.

DIGUANIDINE AMMONIUM FERRICYANIDE

U. S. 2,293,025.

DIPHENYLAMINE, ACETYL-

DIPHENYLAMINE, ACETYLDICHLOROTHIO-

Ger. 460,545.

DISULFIDE, BIS(3-CARBOXY-4-HYDROXYPHENYL)-

Brit. 274,425.

DODECANETHIOL

This is condensed with o-benzaldehydesulfonic acid or other aromatic aldehyde- or ketone-sulfonic acid to form water-soluble thioacetal sulfonic acids useful for mothproofing textiles.-Brit. 492,938.

DODECYL SULFATE

Suitable for dispersing an aqueous solution of a soluble fluoride, for example, magnesium fluosilicate in a liquid hydrocarbon for mothproofing use.-U. S. 2,127,252.

Used as a wetting agent in a mothproofing solution containing triethanolamine fluosilicate.-U. S. 2,176,894.

ELAIDIC ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium, and thallium) of elaidic acid are used for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

ELATERIN

Ineffective.-Jackson and Wassell (18).

EPICHLOROHYDRIN

Goods are heated 8 hours at 50° C. with 1/10 their weight of epichlorohydrin in a closed receptacle in which the relative humidity of the air is 75 percent.-Fr. 800,582.

Used to combat clothes moths.-U. S. 2,202,169.

EPIFLUOROHYDRIN

Fr. 800,582; U. S. 2,202,169.

ESSENTIAL OILS

U. S. 1,479,704.

ESTERS

Esters are suitable solvents for the condensation products of triphenylphosphine oxide with phenols.-Ger. 521,205.

ETHANE, CHLORO-

Liquefied ethyl chloride is added to a mothproofing solution and aids in the penetration of the solution within the fabric to which it is applied.-U. S. 1,901,960.

ETHANE, 1,2-DIBROMO-

Thiuronium salts for mothproofing wool are obtained by the reaction of 1 mol of ethylene bromide with 1 mol of either phenylthiourea or tolylthiourea.-Brit. 346,039; Ger. 522,824.

ETHANE, 1,2-DIBROMO-1-FLUORO-

U. S. 1,955,891.

ETHANE, DICHLORO-

Mixed with carbon tetrachloride for use as a solvent for halogenated phenols.-Brit. 474,600.

ETHANE, 1,2-DICHLORO-

A solvent for:

Aromatic hydroxy compounds.-Brit. 495,639; 497,214.

Aryloxy alkylols.-U. S. 2,134,001.

Ethers or esters of aromatic hydroxy compounds.-Brit. 495,761.

Monophenyl di(o-xenyl) phosphate.-U. S. 2,128,189.

ETHANE, DIMETHYLDIPHENYL-

U. S. 2,005,797.

ETHANE, HEXACHLORO-

It may be used undiluted or in solution in acetone or carbon tetrachloride.-Ger. 353,682.

A dosage of 1 to 1.5 kg. per cubic meter of space is recommended as a clothes moth fumigant.-Gassner (15).

Ineffective.-Jackson and Wassell (18).

ETHANE, TETRACHLORO-

A solvent for as-phenylvalerylthiourea for mothproofing wool.-Brit. 337,823.

ETHANETHIOL, 2-CHLORO-

The condensation product of this with benzaldehyde is a mothproofing agent.-Brit. 491,182; Fr. 829,834.

ETHANOL, 2-BUTOXY-

A solvent for the p-tert-amyl phenolic salt of dixylyl guanidine.-U. S. 2,145,214.

Used to increase the solubility of dixylyl guanidine in petroleum ether.-U. S. 2,157,854.

ETHANOL, 2-ETHOXY-

Used to increase the solubility of dixylyl guanidine in petroleum ether.-U. S. 2,157,854.

ETHANOL

A constituent of "Pyromoth".-Back and Cotton (6).

Ethyl alcohol, 95 percent, when used as a spray proved effective against moth larvae.-Scott, Abbott and Dudley (38).

A solvent for the following mothproofing agents:

Acid fluorides of NH_4 , K and pyridine.-Ger. 485,101.

Aldehyde-phenol condensation products.-Brit. 316,900.

Alkyl naphthalene sulfonic acids.-Brit. 313,043.

Antimony tannate.-U. S. 1,480,289.

Aryloxy alkylols.-U. S. 2,134,001.

Borofluoro acetic acid.-Fr. 661,931; also its K salt.-Aust. 114,042; Brit. 298,538; Ger. 490,221.

p-Chlorophenol ester of p-chlorobenzenesulfonic acid.-U. S. 2,148,928.

p-Chlorophenylmercaptol of acetophenone.-Swiss 194,375.

Dehydracetic acid and coumarin derivatives.-Ger. 665,214.

Dehydracetic acid and derivatives of tetrionic acids.-
Brit. 478,398; U. S. 2,127,879.

Derris extract.-U. S. 1,854,948.

2,2', 3,3' and 4,4'-Dichlorophenylmercaptals of o-benzaldehyde-sulfonic acid.-Swiss 196,143; 196,144; 196,145.

4,4'-Difluorobiphenyl.-Brit. 333,583.

Fluorocoumarin.-Brit. 421,885.

Halogenated resorcinol derivatives.-U. S. 2,093,778.

2-(m-Hydroxyphenoxy) 2'-chlorodiethyl ether.-U. S. 2,098,204.

Mercaptals and mercaptols (formed by condensing mercaptans with unsulfonated aldehydes or ketones).-Brit. 491,182; Fr. 829,834.

Monophenyl di(o-xenyl) phosphate.-U. S. 2,128,189.

- Oleoresin adhesive composition.-Brit. 463,725.
- Organic fluorine compounds.-U. S. 1,955,891.
- Paradichlorobenzene.-Brit. 19,688 of 1912; U. S. 1,097,406.
- Patchouli oil.-U. S. 1,605,202.
- Phosphine dihydroxide, triphenyl.-U. S. 1,766,819.
- Phosphonium compounds, e.g. benzyltriphenylphosphonium chloride and fluoride.-Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.
- Phosphoric acid aryl esters.-Ger. 480,180; U. S. 1,748,675.
- Quinidine sulphate.-Swiss 125,139; U. S. 1,615,843.
- Quinoidine fatty acid salts.-U. S. 1,694,219.
- Strontium acetate and salicylate.-Brit. 365,233; Fr. 707,840; Ger. 515,956; U. S. 1,923,223.
- Strychnos alkaloids.-Brit. 327,009.
- Thianthrene and its derivatives.-Ger. 665,215.
- Thiourea, acetyl-allyl.-Brit. 337,823.
- Triethanolamine fluosilicate.-Can. 381,574.
- Triphenylsulfonium chloride.-Brit. 487,804.

A mixture of alcohol and benzene is used as a solvent for tin triethyl fluoride for spraying on fur.-Brit. 303,092; U. S. 1,744,633.

A mixture of alcohol and chloroform is used as a solvent for triethanolamine fluosilicate.-Can. 381,574.

A mixture of alcohol and gasoline is used as a solvent for fluosilicates of cinchona alkaloids.-Can. 381,574.

Denatured alcohol is an ingredient of an arsenical solution for destroying clothes moths in fur.-Brit. 368,179.

ETHANOL, m-sec-AMYLPHENOXY-

ETHANOL, m-tert-AMYLPHENOXY-

ETHANOL, p-n-BUTYLPHENOXY-

U. S. 2,134,001.

ETHANOL, o-tert-BUTYLPHENOXY-

Effective vs. larvae of the black carpet beetle, Attagenus piceus.-

U. S. 2,134,001.

ETHANOL, p-tert-BUTYLPHENOXY-

A 3 to 7.5 percent by weight solution of this in a volatile highly refined petroleum distillate effectually proofed white mohair cloth against the attacks of the larvae of the black carpet beetle.-U. S. 2,134,001.

ETHANOL, o-CYCLOHEXYLPHENOXY-

ETHANOL, p-CYCLOHEXYLPHENOXY-

ETHANOL, o-CYCLOPENTYLPHENOXY-

U. S. 2,134,001.

ETHANESULFONIC ACID, OLEYLHYDROXY-, SODIUM SALT

Eighty parts of oleyl-hydroxyethanesulfonic acid in the form of its sodium salt and 20 parts of dichlorosalicylic acid are intimately mixed. Wool treated in a solution of 20 parts of such a soap in 1000 parts of water is cleaned and rendered mothproof.-U. S. 2,082,188; 2,130,435; 2,184,951.

ETHANESULFONIC ACID, OLEYLMETHYLAMINO-

To 80 parts of oleylmethylaminoethanesulfonic acid 20 parts of sodium silicofluoride are added, and the whole is intimately mixed. Other acid mothproofing agents such as potassium hydrofluoride, borofluoroacetic acid, or acid salts of selenic acid can be used. Wool, hair, feathers and the like treated with a solution of 10 parts of this special soap in 1000 parts of water will be cleaned and mothproofed at the same time.-U. S. 2,082,188; 2,130,435.

ETHANESULFONIC ACID, OLEYL-N-METHYLAMINO-, SODIUM SALT

Used as a wetting agent in a mothproofing solution containing tri-ethanolamine silicofluoride.-U. S. 2,176,894.

ETHANESULFONYL FLUORIDE

ETHANESULFONYL FLUORIDE, CHLORO-

ETHANESULFONYL FLUORIDE, DIETHYLAMINO

ETHANESULFONYL FLUORIDE, DIMETHYLAMINO

U. S. 2,114,577.

ETHER

A solvent for:

Aluminum naphthenate.-U. S. 2,078,458.

beta-(meta-Hydroxyphenoxy) beta'-chlorodiethyl ether.-

U. S. 2,098,204.

Derris extract.-U. S. 1,854,948.

The 2,2'-dichloro, the 3,3'-dichloro, and the 4,4'-dichloro phenylmercaptals of o-benzaldehydesulfonic acid.-Swiss 196,143; 196,144; 196,145.

Quinoidine.-U. S. 1,694,219.

The addition compounds of ether with anhydrous magnesium bromide, titanium chloride, boron fluoride, or tin chloride are decomposed by water and give off toxic vapors used to fumigate verminous clothing.-Brit. 426,398.

ETHER, BIS(CHLOROPHENYL)

Brit. 502,320.

ETHER; p-CHLOROBENZYL 2,4-DICHLOROPHENYL

Animal fibers are mothproofed by the application of the p-chloro-benzyl ether of 2,4-dichlorophenol together with a lubricant used in one of the manufacturing steps.-Brit. 453,053.

ETHER, 5-CHLORO-2-HYDROXYBENZYL DODECYL

A woolen cloth is put into a solution of 2 parts by weight of dodecyl (2-oxy-5-chloro-benzyl) ether in 100 parts of washing benzine using 10 times the amount of benzine solution compared with the piece of cloth. After the impregnation the cloth is centrifuged in the usual manner and after evaporation of the solvent the cloth is protected from damage by moths.-Brit. 497,214; Fr. 48,395; 1st addition to 802,508.

ETHER, METHYL 2-NAPHTHYL

Ineffective.-Jackson and Wassell (18).

ETHERS

Solvents for condensation products of triphenylphosphine oxide with phenols.-Ger. 521,205.

Brucine anilide and its salts.-U. S. 2,015,533.

ETHYL ACETATE

Forms addition compounds with antimony chloride, boron fluoride, calcium chloride, magnesium chloride, and titanium chloride which when exposed to moisture decompose, liberating ethyl acetate which is used to fumigate verminous clothing.-Brit. 426,398.

The reaction product of ethyl acetate with boron trifluoride is used to mothproof wool.-Ger. 502,600; U. S. 1,757,222.

ETHYLENE, TETRACHLORO-

A solvent for mixtures of arylsulfonic acid amides with phosphoric acid esters.-Brit. 407,356; U. S. 1,955,207.

ETHYLENE, TRICHLORO-

Mixed with carbon tetrachloride for use as a solvent for halogenated phenols.-Brit. 474,600.

A solvent for:

Aromatic hydroxy compounds.-Brit. 495,639; 497,214.

Aryloxy alkylols.-U. S. 2,134,001.

Arylsulfonic acid amides when mixed with phosphoric acid esters.-
Brit. 407,356; U. S. 1,955,207.

Ethers or esters of aromatic hydroxy compounds.-Brit. 495,761.

Monophenyl di(o-xenyl) phosphate.-U. S. 2,128,189.

Sulfochlorides.-Ger. 449,126.

Used with an aqueous solution of magnesium fluosilicate.-U. S.
2,127,253.

ETHYLENEDIAMINE, N,N'-BIS(5-CHLORO-2-HYDROXYPHENYLSULFONYL)-

Brit. 325,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

ETHYLENEDIAMINE, N,N'-BIS(2,5-DICHLOROPHENYLSULFONYL)-

ETHYLENEDIAMINE, N,N-DIETHYL-, REACTION PRODUCT WITH PHOSPHORUS NITRO-
CHLORIDE

Wool is treated at 90° C. with a neutral aqueous solution containing sodium sulfate, and 0.5 percent of a hydrogen halide of a phosphorus-nitrogen-compound made from 1 mol phosphorus nitrochloride and 6 mols of as-diethylethylenediamine. The goods thus treated are immune from damage by moths, even after milling. Even solutions of 0.2 percent strength suffice to yield a satisfactory protection.-Brit. 500,386.

ETHYLENEDIAMINE FLUOSILICATE

U. S. 2,075,359.

ETHYLENEDIAMINE FLUOSILICATE, N-PHENYL-

A wool-preservative, disinfectant, and antiseptic.-U. S. 1,917,463.

ETHYLENEIMINE, METHYL-, CONDENSATION PRODUCT OF,

Methyl-ethyleneimine is condensed with stearyl bromide and this product is used to impregnate textiles.-Fr. 810,395.

ETHYLENEIMINES, ALKYL-

Fr. 800,582.

ETHYLENE OXIDE

May be used with an alkyl sulfofluoride as a fumigant.-U. S. 2,114,577.

ETHYL FORMATE

Same as for ethyl acetate.-Brit. 426,398.

Also forms an addition compound with titanium chloride.

EUCALYPTUS LEAVES

Eucalyptus leaves dusted are ineffective against clothes moth larvae.- Scott, Abbott, and Dudley (38); Back (5); Mullin (24); White, Fulton and Cranor (42).

EUCALYPTUS OIL

Clothing treated with an emulsion of eucalyptus oil in soap solution will protect the wearer from the stings of gnats.-Ger. 577,760.

Insects and eggs in garments, rugs, furs, etc. are destroyed by fumigating with carbon disulfide, carbon tetrachloride, or p-dichloro-benzene mixed with eucalyptus oil to mask the odor.-U. S. 1,630,836.

EULAN

The following have described mothproofing tests with Eulan preparations but without divulging their compositions: - Hecke (17); Kingzett (19); Mullin (24,25); Sachs (36); Anon. (3).

Eulan A - White, Fulton and Cranor (42).

Eulan B - Clark and Craft (13).

Eulan BL - Mullin (26).

Eulan Extra - Clark and Craft (12,13); Anon. (3).

Eulan F - Clark and Craft (13); Meckbach (21).

Eulan F Extra - White, Fulton and Cranor (42); Mullin (26).

Eulan RH - Clark (12).

Eulan RHF - Anon. (3); Clark (12).

Eulan W Extra - Sachs (36); Clark (12).

FAT

Used as a softening agent in an adhesive mothproofing composition to make the coating more pliable.-Brit. 463,725.

A fat, such as poppy-seed oil, is used with an odorous insecticidal material in impregnating wood to form an artificial cedar board or "moth wood".-Ger. 470,458.

FATTY ACIDS

A fatty acid, or a salt of the same, such as the calcium soap, may be used in the same way as a fat in Ger. 470,458.

FATTY ACIDS, SULFONATED

Sulfonated fatty acids or their salts are used as wetting agents in mothproofing wool.-Ger. 507,097.

FATTY ACIDS, TERPINYL ESTERS

Mentioned as insect repellents that last only 2 to 3 hours.--Brit. 421,885.

FATTY OILS

Solvents for fluorocoumarin.--Brit. 421,885.

FERROUS SULFATE

Ferrous sulfate solution is both a preventive and a remedy against clothes moths.--Mullin (24,25).

FLUOALUMINIC ACID, SUBSTITUTED AMMONIUM SALTS

U. S. 2,163,104.

FLUOBORACETIC ACID

Twenty parts of fluoboracetic acid with 80 parts of oleyl-methyl-amino-ethane sulfonic acid are used as a 1 percent aqueous solution.--U. S. 2,082,188; 2,130,435.

100 kg. of wool are treated with 2 percent potassium borofluoroacetate.--Fr. 661,931.

Wool, feathers, hair, etc. are protected against moths by washing with soap with which fluoboracetic acid or its salts has been incorporated.--Ger. 581,990.

FLUOBORIC ACID

U. S. 1,682,975.

Reference is made to the known use of fluoroboric acid and its salts for mothproofing.--Ger. 490,221. The use of alkaline borofluorides for enhancing the disinfecting power of tar acids and heavy oils is referred to in Brit. 366,090.

FLUOBORIC ACID, SUBSTITUTED AMMONIUM SALTS

U. S. 2,163,104.

FLUOBORO ORGANIC ACIDS

Brit. 298,538; 316,987.

FLUOMOLYBDIC ACID, SALTS OF

U. S. 1,682,975.

FLUORIDES

Among the better mothproofing solutions tested were the fluoride solutions.--Back and Cotton (6,7,8).

Most of the hydrofluorides proved ineffective as mothproofing agents.--Jackson and Wassell (18).

Soluble fluorides, more particularly the fluorides of sodium, potassium, lithium, zinc, and aluminum, are claimed in Brit. 235,914 and 235,915, and U. S. 1,634,790; 1,634,791; and 1,634,792.

Soluble fluorides are mentioned as known mothproofing agents in U. S. 2,010,443; 2,127,252.

Any fluoride compound may be employed as the toxic agent in mothproofing woolen goods.--Brit. 236,218.

Salts or double salts of hydrofluoric acid for mothproofing purposes are claimed in Ger. 347,849.

Wood flour treated with fluorides is rolled in a drum with furs in order to render them resistant to mites.--Fr. 636,434.

A solution of a soluble fluoride and a bile salt is used for mothproofing.--U. S. 1,732,240.

An insecticide composition for woolen goods comprises an aqueous solution containing 1 percent or less of a soluble fluoride, less than 0.5 percent of bile salts, and carbon dioxide dissolved therein to saturation under sufficient pressure to cause penetration of the insecticide into the goods.-U. S. 1,901,960.

Solutions of inorganic or organic fluorine compounds in aqueous alcohols or ketones or mixtures of alcohols and ketones with water are used for mothproofing wool.-Ger. 485,101.

Inorganic or organic compounds of the general formula $X(HF)_n$, in which X represents an inorganic or organic complex, are claimed for mothproofing purposes, in Ger. 500,333.

A process for protecting wool, fur, or the like against attack by moth and damage by other textile pests consists in treating the material to be protected with an organic fluorine compound containing at least one fluorine atom attached to a carbon atom. Examples of compounds suitable for the process are fluorine substituted aliphatic hydrocarbons, carboxylic acids, sulfonic acids, and derivatives thereof, also fluorine substituted benzene compounds and homologues and derivatives thereof.-Brit. 333,583; Fr. 670,674; Ger. 504,886.

FLUOROFORM

Moth-infested furniture is effectively fumigated in 24 hours with fluoroform.-Brit. 333,583; Fr. 670,674; Ger. 504,886.

FLUOSILICIC ACID

This acid and its salts are used with acid washing agents to make mothproofing detergent compositions.-U. S. 2,082,188; 2,130,435.

Wool, feathers, hair, etc. are protected against moths by washing with soap in which fluosilicic acid has been incorporated.-Ger. 581,990.

Soluble fluosilicates, particularly those of sodium, potassium, lithium, zinc, and aluminum, are claimed as ingredients of a mothproofing composition.-Brit. 235,914; 235,915; U. S. 1,634,790; 1,634,791; 1,634,794.

Certain silicofluorides, e.g., sodium silicofluoride and sodium aluminum silicofluoride, are employed for mothproofing in solution in a volatile solvent, e.g., water, with the addition of substances to lower the surface tension such as saponins, soaps, bile salts, and sulfonic acids, and with a gas, e.g., air, nitrogen, or carbon dioxide dissolved in the solution under pressure which tends to disperse the same more thoroughly within the fibers of the fabric. Liquefied substances such as ethyl chloride or methyl chloride which are normally gaseous may also be employed to produce pressure.-U. S. 1,901,960.

Fluosilicates are referred to as efficacious mothproofing substances in U. S. 1,915,922; 2,010,443.

FLUOSILICIC ACID, ESTERS AND SALTS

The following fluosilicates have been proposed for mothproofing purposes:

Esters of the reaction product of the polyvinyl chloroacetate and dibutylamine.

Ester of the cyclohexanone-formaldehyde-methylamine resin.

Ester with dimethylaminopropyl cellulose.

beta-Diethylaminoethyl methacrylate salt.

beta-Dimethylaminomethyl methacrylate salt.

Dimethylaminomethylzoin salt.

Dimethylamine phenol-formaldehyde resin salt.

Methylamine phenol-formaldehyde resin salt.

Methylglucamine phenol-formaldehyde resin salt.

Piperidylmethylzein salt.

U. S. 2,163,104.

Dimethylaminopropyl cellulose; the reaction product of polyvinyl chloroacetate and dibutylamine; and the resin obtained by reacting cyclohexanone and formaldehyde with methylamine. These polymers are substantially insoluble in water and 5 percent aqueous ammonia but soluble in 2 percent aqueous acetic acid, and are preferably capable of being converted to a coherent film.-U. S. 2,163,104.

FLUOSILICIC ACID, ORGANIC AMINE SALTS

Solutions for mothproofing fabrics comprise organic silicofluorides in organic solvents.-Can. 381,574.

The following heterocyclic fluosilicates may be used for mothproofing: quinoline, nicotine, picoline, lutidine, collidine, isoquinoline, quinaldine, naphthoquinaldine, acridine, and carbazole. The fluosilicates of crude coal tar bases may also be used. These bases may be partially or wholly hydrogenated as exemplified by piperidine, or by pyrrolidine, or alkyl pyrrolidines.-U. S. 2,075,359.

Fluosilicates of aliphatic bases are used as wool-preservatives, disinfectants, and antiseptics.-U. S. 1,917,463.

Fluosilicates of aliphatic, heterocyclic, and aromatic amines are insect-proofing agents for textiles.-Brit. 391,141; 396,064; also the fluosilicates of amino-naphthalenes, amino-diphenyls, amino-anthracenes.-U. S. 2,075,359.

FLUOSTANNIC ACID

U. S. 1,682,975.

FLUOSULFONATES, ARYL-

A process of making aryl fluorosulfonates, useful for combating moths, by heating aryldiazonium fluorosulfonates is described in Ger. 532,394.

FLUOSULFONIC ACID

Free fluosulfonic acid or its salts are used for preserving textile fabrics and other porous organic materials. Suitable salts are those of lithium, potassium, sodium, ammonium, zinc, aniline, pyridine, quinoline, betaine, and hexamethylenetetramine.-U. S. 1,448,276.

FLUOTITANIC ACID

100 parts of wool are placed over night in a bath containing 3000 parts of water, one part of titanium hydrofluoric acid, two parts of sulphate of zinc, 20 parts of Glauber's salt and three parts of formic acid. The wool is then rinsed and dried.-Brit. 173,536; Ger. 347,849; Swed. 59,841; U. S. 1,682,975.

This acid and its salts are used with acid washing agents to make mothproofing detergent compositions.-U. S. 2,082,188; 2,130,435.

FLUOTITANIC ACID, SUBSTITUTED AMMONIUM SALTS

U. S. 2,163,104.

FLUOTITANOUS ACID

Wool feathers, hair, etc. are protected against moths by washing with soap in which fluotitanous acid has been incorporated.-Ger. 581,990.

FORMALDEHYDE

Formaldehyde killed the eggs of clothes moths when used undiluted and when diluted with 5 parts of water, but when used at the rate of 1 part to 10 parts of water eggs were not killed. Formaldehyde in solution and in crystalline form (paraformaldehyde) failed to kill a majority of the adults and was of no value against larvae.-Scott, Abbott and Dudley (38).

Formaldehyde sprayed 1 to 10 is worthless for clothes moth control and formaldehyde fumigation is worthless for control of clothes moths or other fabric pests, notwithstanding general belief.-Back (5); also Smith (39); Mullin (24); Clark (11); Gassner (15).

Skins treated for several hours in a dilute solution of formaldehyde are to a certain extent immune from the attack of vermin and moths.-Lawrie (20).

Formaldehyde gives marked protection against the action of bacteria and would probably also give immunity against attack by moths.-Trotman, Trotman, and Brown (41).

A solution of formaldehyde in kerosene or turpentine at the rate of 20 grams per liter is used for preserving timber, furniture, and leather from attack by animal and vegetable pests.-Brit. 221,599.

"Pyromoth", containing formaldehyde as one of its constituents, has offered very good protection from the ravages of fabric pests.-Back and Cotton (6).

Gypsum blocks are soaked in formalin, then in naphthalene or para-dichlorobenzene and finally in paraffin for use against moths.-Ger. 409,510.

Materials are protected against insects by treating with formaldehyde solution followed by an aqueous solution of ammonia. This forms hexamethylenetetramine in the impregnated material.-Ger. 272,822.

Mothproofing products are made by condensing formaldehyde with various halogenated phenols. For example, with p-fluorophenol.-Brit. 335,547; and Ger. 535,151; with p-bromophenol, Aust. 118,640; Brit. 316,900; Fr. 651,646; Ger. 503,256; with p-chlorophenol or 2,4-dichlorophenol, Aust. 118,640; Brit. 316,900; Ger. 503,256; Swiss 135,166; with a mixture of p-chlorophenol and 3,5-dichloro-2-hydroxybenzyl alcohol followed by sulfonation, Brit. 337,808; with 2,6-dichlorophenol, 3-chloro-o-cresol, m-chlorophenol, p-cresol, and 4-chloro-1-naphthol, Brit. 330,894; Fr. 681,795; Ger. 506,989.

Condensation products of formaldehyde with p-chlorophenol or p-bromophenol or m-chlorophenol are further chlorinated or brominated to produce mothproofing products.-Brit. 338,126.

Condensed with 6-chloro-o-cresol to make a mothproofing product.-Aust. 124,284; U. S. 1,906,890.

The condensation product obtained from 1 molecule of formaldehyde and 2 molecules of p-chlorophenol is sulfonated with sulfuric acid (66° Be.) at 20-25° C., introducing two sulfonic acid groups.-Fr. 39,337; Ger. 541,629.

The condensation product obtained from formaldehyde and p-cresol is used for mothproofing.-Aust. 124,284.

Condensed with 2,5-dibromophenol.-Ger. 536,551.

Condensed with 3-chloro-o-cresol.-Ger. 536,551.

Condensed with 5-chloro-o-cresol.-Ger. 536,551.

Condensed with phenol and urea and the condensation product sulfonated.-Brit. 419,179; Fr. 766,945.

Condensed with chlorophenol and urea and the condensation product sulfonated.-U. S. 1,906,890.

Condensed with 3-chloroguaiacol.-Ger. 536,551.

A weak solution of formaldehyde is used to harden rubber latex, an ingredient of a mothproofing adhesive composition.-Brit. 463,725.

FORMAMIDINESULFINIC ACID

Acts as a repellent to carpet beetle larvae.-U. S. 2,197,624.

FORMIC ACID

Formic acid is an ingredient of mothproofing solutions claimed in Brit. 173,536; 235,915; Ger. 346,597; 347,722; and 347,849; and U. S. 1,494,085; 1,634,791; and 1,682,975. For example, 100 parts of wool are placed overnight in a bath containing 1 part titanium hydrofluoric acid, 2 parts sulfate of zinc, 10 parts Glauber's salt, and 3 parts formic acid. The wool is then rinsed and dried.-Ger. 347,849.

Formic acid is used with Eulan F for mothproofing wool.-Meckbach (21).

FORMIC ACID, METHYL ESTER

One hundred parts by weight of an addition compound made from methyl formate and anhydrous magnesium chloride and containing about 50 percent of methyl formate is covered with 100 to 200 parts of water. This mixture appears to boil and the whole of the methyl formate in it is expelled in the form of gas. The gas evolved suffices to destroy pests in a cupboard containing verminous clothing of a volume of about 300 to 400 liters.-Brit. 426,398.

The ethyl, propyl and butyl esters are similarly employed.

FORMIC ACID, TERPINYL ESTERS

Mentioned as an insect repellent that lasts only 2 to 3 hours.-

Brit. 421,885.

FORMIC ACID, CHLORO-, ETHYL ESTER

May be added as a warning agent to an alkyl sulfofluoride used as a fumigant.-U. S. 2,114,577.

FUCHSIN

Wool dyed with fuchsin was badly damaged by clothes moth larvae and black carpet beetle larvae.-Minaeff (22).

FULLER'S EARTH

Used as a diluent for:

Halogenated phenols.-Brit. 474,600.

Aromatic hydroxy mothproofing compounds.-Brit. 495,639;
497,214; and their ethers or esters.-Brit. 495,761.

GASOLINE

Gasoline sprayed on pieces of flannel infested with larvae killed all larvae.-Scott, Abbott and Dudley (38).

Gasoline sprayed on flannel killed clothes moth eggs. Dipping clothing in gasoline will kill clothes moths, and articles so dipped and coming direct from the dry-cleaning process may be considered freed from moth infestation.-Back (5).

Gasoline will kill every caterpillar that it touches.-Smith (39).

Gasoline is mentioned as a moth-repellent.-Jackson and Wassell (18).

Gasoline is an effective remedy against clothes moths.-Mullin (24).

Gasoline fumes are ineffective against clothes moths.-Benedict (10).

Used with an aqueous solution of magnesium fluosilicate.-U. S. 2,127,252.

Used as a softening agent in an adhesive mothproofing composition to make the coating more pliable.-Brit. 463,725.

Gasoline mixed with alcohol is a solvent for the silicofluorides of cinchona derivatives.-Can. 381,574.

GELATINE

An ingredient of mothproofing compositions.-U. S. 1,634,792 and 1,634,793. The gelatine acts as a wetting agent and enables the mothproofing composition to more readily and thoroughly penetrate the materials. The preferred composition is 0.1 percent sodium oleate; 0.005 percent gelatine; 1 percent sodium fluoride and 0.004 percent citric acid.-Brit. 236,218.

GLUE

Glue is an ingredient of the following solution used to mothproof hair felt: water, 10 gallons; soda ash crystals, 43 pounds; white arsenic, 10 pounds; glue, 1 pound; soap, 1/4 to 1/2 pound.-U. S. 1,558,122.

A constituent of an adhesive mothproofing composition.-Brit. 463,725.

GLYCEROL

A mothproofing agent consists of water-insoluble vegetable alkaloid compounds which are produced by the reaction of crystallized quassin and quinine in the presence of hydrobromic acid and hydrogen peroxide dissolved in alcohol, the salts being prevented from recrystallizing after the solvent has evaporated by the addition to the latter of a small quantity of a stable, non-volatile auxiliary solvent, for example, glycerine.-Brit. 399,938.

Aqueous glycerol is a solvent for halogenated resorcinol derivatives.-U. S. 2,093,778.

Used as a softening agent in an adhesive mothproofing composition to make the coating more pliable.-Brit. 463,725.

GLYCOCHOLIC ACID, SODIUM SALT

A mothproofing liquid comprises an aqueous solution containing about 0.5 percent of sodium fluoride and 0.2 percent of a mixture of the bile salts sodium taurocholate and sodium glycocholate.-U. S. 1,901,960.

GLYCOL

Aqueous glycol is a solvent for halogenated resorcinol derivatives.-U. S. 2,093,778.

GOULAC

A substance derived from the residual lyes in the boiling of wood pulp, by the sulfite process. Used to emulsify a solution of chlorinated naphthalene in hydrogenated naphthalene in water.-U. S. 2,136,020.

GUAIACOL

The condensation product of guaiacol and cyclohexanone is used for mothproofing wool.-Brit. 326,451; Fr. 681,795; Ger. 530,331.

GUAIACOL, 3-CHLORO-

m-Chloroguaiacols may be condensed with aldehydes to form products useful for mothproofing wool.-Brit. 330,894.

Mothproofing agents are made by condensing 3-chloroguaiacol with o-benzaldehydesulfonic acid.-Ger. 536,551; U. S. 1,906,890; or with formaldehyde.-Ger. 536,551.

GUALACOLS, HALOGENATED

These compounds, substituted at a carbon atom by a hexyl, octyl, decyl, dodecyl, tetradecyl, hexadecyl or octadecyl residue are used as mothproofing agents.-Brit. 474,600.

GUANIDINE, COMPOUND WITH p-tert-AMYLPHENOL

Reference to a solution of this in petroleum naphtha as a commercial mothproofing solution is made in U. S. 2,157,854.

GUANIDINE, FATTY ACID SALT

Reference to a solution of this in petroleum naphtha (U. S. 1,915,922) as a commercial mothproofing solution is made in U. S. 2,157,854.

GUANIDINE, BIS(p-METHYLANILINO)-

U. S. 1,915,922.

GUANIDINE, DIARYL-, COMPOUNDS WITH PHENOL

A mothproofing composition contains a phenolic salt of a diaryl guanidine.-Can. 375,599; U. S. 2,145,214.

GUANIDINE, DIBENZYL-

GUANIDINE, DI-alpha-NAPHTHYL-

GUANIDINE, DIPHENYL-

GUANIDINE, as-DIPHENYL-

The fatty acid, e.g., oleic acid, salts of these guanidines are suitable for mothproofing.-U. S. 1,915,922.

GUANIDINE, 1,3-DIPHENYL-

Ineffective.-Jackson and Wassell (18).

Diphenylguanidine, 1 percent in acetone, had mothproofing value, but it made the fabric very stiff.-Minaeff and Wright (23).

GUANIDINE, 1,3-DIPHENYL-1-METHYL-

GUANIDINE, DI-o-TOLYL-

GUANIDINE, DI-p-TOLYL-

The fatty acid, e.g., oleic acid, salts of these guanidines are suitable for mothproofing.-U. S. 1,915,922.

GUANIDINE, 1,3-DITOLYL-

Ineffective.-Jackson and Wassell (18).

GUANIDINE, DIXYL-
GUANIDINE, DIXYL-
GUANIDINE, DIXYL-

The use of the fatty acid salts of dixyl guanidine for mothproofing wool (proposed in U. S. patent 1,915,922) is referred to in U. S. 2,145,214.

Dixyl guanidine is heated with para tertiary amylphenol to form a mothproofing compound. (U. S. 2,145,214), or with other para-tertiary alkyl phenols (Can. 375,599).

A composition of matter useful for mothproofing comprises a solution of salt of xylyl guanidine in an organic solvent (e.g., petroleum naphtha) and a sufficient quantity of a substance chosen from the group consisting of secondary butyl alcohol and an alkyl ether of ethylene glycol to increase the solubility of the salt of xylyl guanidine in the solvent. A mothproofing solution made up from 94 percent petroleum naphtha, 3 percent dixyl guanidine and 3 percent cocoanut oil fatty acids became cloudy when lowered to a temperature of -6° C. When a similar mixture containing 2 percent of the butyl ether of ethylene glycol to replace 2 percent of the petroleum naphtha was made, it remained perfectly clear after two hours at a temperature of -15.5° C. The same effects were obtained when using the ethyl ether of ethylene glycol and secondary butyl alcohol.-U. S. 2,157,854.

GUANIDINE, DIXYLYL-, COMPOUND WITH p-tert-AMYLPHENOL

U. S. 2,145,214.

GUANIDINE, TRIPHENYL-

Brit. 238,287; Fr. 581,037; Ger. 402,341; U. S. 1,562,510.

Triphenylguanidine up to 2 percent in acetone had little mothproofing value; moreover, it rendered the fabric so stiff that it was unusable.-Minaeff and Wright (23).

GUANIDINE, XLYLYL-, OLEIC ACID SALT

Six parts of xlylylguanidine, made from commercial mixed xylidines, and 4.7 parts of oleic acid are mixed and stirred into 250 parts of petroleum naphtha. This solution is then used for the impregnation of woolen cloth in a proportion of about 1 lb. of solution to 20-40 lbs. of wool. The naphtha is allowed to evaporate. The resulting cloth is thus protected against the ravages of the insects.-U. S. 1,915,922.

GUANIDINE AMMONIUM FERRICYANIDE

U. S. 2,293,025.

GUM

Used as a softening agent in an adhesive mothproofing composition to make the coating more pliable.-Brit. 463,725.

GUM ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium and thallium) of gum acid are claimed for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

GYPSUM

A plaster composition repellent to moths or Dermestidae has the following composition: aromatic cedar dust, 64 percent, gypsum hard wall plaster 33 percent, pure red oxide (or other coloring matter) 2 percent, creosote of wood tar, 0.90 percent, cedar-leaf oil 0.10 percent.-U. S. 1,620,587.

HAIARI EXTRACT

The active principle is used in solution in a petroleum naphtha having a boiling point range between 450 and 550° F.-Can. 338,897; U. S. 1,854,948.

HELLEBORE, WHITE

White hellebore (the powdered root of Veratrum album) dusted proved ineffective against clothes moth larvae.-Scott, Abbott and Dudley (38); also Back (5) and Mullin (24).

HEMP

Reference is made to the use of alcoholic solutions of hemp constituents for mothproofing wool.-Ger. 485,101.

HENBANE EXTRACT

Hung. 96,941.

HEXAMETHYLENETETRAMINE

This is formed in materials to protect them against insects by the action of ammonia on formaldehyde.-Ger. 272,822.

HEXAMETHYLENETETRAMINE FLUOROSULFONATE

Used for preserving textile fabrics and other porous organic materials.-U. S. 1,448,276.

3-HEXENEDIAMINE

Feathers are treated for half an hour at 30-40° C. with an aqueous solution of 6 to 8 grams per liter of the quaternary ammonium compound obtainable from 1 mol of bis(3,4-dichlorophenoxy) phosphorus sulfochloride, 1 mol of asymmetric diethyl-ethylenediamine and 1 mol of 3,4-dichloro-benzyl chloride.-Brit. 483,368.

HYDRAZINE HYDROFLUORIDE

Ineffective.-Jackson and Wassell (18).

HYDRAZINE SULFATE

Hydrazine sulfate, as well as the following combinations are ineffective for mothproofing: Hydrazine sulfate in water, followed by ammonium fluoride in water; hydrazine sulfate, ammonium fluoride, and dry-cleaning soap in naphtha; hydrazine sulfate, magnesium sulfate, and ammonium fluoride in water.-Jackson and Wassell (18).

HYDRAZINESULFONIC ACID, BENZYLIDENEPHENYLMETHYL-

Brit. 238,287; Fr. 581,037; U. S. 1,562,510.

HYDRIODIC ACID

HYDROBROMIC ACID

Salts of quaternary phosphonium bases with these acids are claimed in Ger. 506,987.

HYDROCARBONS

Solvents for:

Aryloxy alkylols.-U. S. 2,134,001.

Bromo- and chloronaphthalene.-Brit. 261,241.

Condensation products of triphenylphosphine oxide with phenol.-

Ger. 521,205.

Diphenyl ether and its derivatives.-Swiss 199,985.

Diphenyl oxide and diphenyl sulfide.-Brit. 502,320.

Halogenated benzene derivatives.-Brit. 484,448.

Mercaptals and mercaptols (formed by condensing mercaptans with unsulfonated aldehydes or ketones).-Brit. 491,182; Fr. 829,834.

Thianthrene and its derivatives.-Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

Used with an aqueous solution of magnesium fluosilicate.-U. S. 2,127,252.

A method of preserving cellulosic material comprises impregnating it with an emulsion containing a liquid hydrocarbon and an aqueous solution containing arsenious acid and ammonia, the aqueous solution being capable of depositing free arsenious oxide upon exposure to air.-Brit. 321,786.

Hydrocarbon oils are an effective remedy against clothes moths.-Mullin (24).

Timber is insect-proofed with a mixture of 1 part of the paraffin hydrocarbon sold as burning oil 300°; 1 part paradichlorobenzene and 1 part of hexachloronaphthalene.-Brit. 253,993.

HYDROCARBONS, HALOGENATED

Solvents for:

Aluminum naphthenate.-U. S. 2,078,458.

Aromatic hydroxy compounds.-Brit. 495,639; 497,214.

Condensation products of triphenylphosphine oxide with phenols.-Ger. 521,205.

Cube extract.-Can. 338,896.

Diphenyl ether and its derivatives.-Swiss 199,985.

Diphenyl oxide and diphenyl sulfide.-Brit. 502,320.

Ethers or esters of aromatic hydroxy compounds.-Brit. 495,761.

Halogenated benzene derivatives.-Brit. 484,448.

Halogenated phenols.-Brit. 474,600.

Mercaptals and mercaptols (formed by condensing mercaptans with unsulfonated aldehydes or ketones).-Brit. 491,192; Fr. 829,834.

Thianthrene and its derivatives.-Brit. 467,701; Ger. 665,215;
U. S. 2,123,572.

Used with an aqueous solution of magnesium fluosilicate.-U. S.
2,127,252.

HYDROCHLORIC ACID

Salts of quaternary phosphonium bases with hydrochloric acid are used for mothproofing.-Ger. 506,987.

HYDROCYANIC ACID

Salts of quaternary phosphonium bases with hydrocyanic acid are used for mothproofing.-Ger. 506,987.

Mentioned as a dangerously toxic moth fumigant.-Fr. 670,674; U. S.
2,091,075.

Hydrocyanic acid is inferior to fluoroform for destroying moths in furniture.-Brit. 333,583; Ger. 504,886.

May be used with an alkyl sulfofluoride as a fumigant.-U. S.
2,114,577.

HYDROFLUORIC ACID, SUBSTITUTED AMMONIUM SALTS

U. S. 2,163,104.

HYDROFLUORIC ACID

This is one of the materials claimed in Brit. 173,536; Ger. 347,722 and 347,849; U. S. 1,682,975; and Fr. 518,821 for mothproofing wool. For example, 100 parts of wool are boiled for one hour in a bath (5,000 parts water) consisting of 2 parts hydrofluoric acid, 10 parts Glauber's salt, and 3 parts concentrated sulfuric acid. The wool is then rinsed and well dried.--U. S. 1,682,975.

100 kg. of material in 10 times the quantity of hot or cold water is treated with 2 kg. of the addition product from the sodium salt of paratoluenesulfonic acid and 2 mols of hydrofluoric acid.--Brit. 295,742.

Hydrofluoric acid, in combination with Glauber's salt and sulfuric acid in water, is ineffective.--Jackson and Wassell (18).

Salts of quaternary phosphonium bases with hydrofluoric acid are used for mothproofing.--Ger. 506,987; U. S. 1,921,364.

An acid soap mixed with hydrofluoric acid or a soluble salt of it (e.g., potassium acid fluoride) is used for mothproofing wool.--Brit. 366,090.

Salts or double salts of hydrofluoric acid, such as zinc fluoride, aluminum fluoride, and titanium fluoride, are used to mothproof woollen material.--Swedish 59,841.

The use of alkaline fluorides for enhancing the disinfecting power of tar acids and heavy oils is referred to in Brit. 366,090.

Soap to which hydrofluoric acid or its salts have been added possesses mothproofing properties.--Fr. 40,647.

Wool, feathers, hair, etc. are protected against moths by washing with soap with which hydrofluoric acid has been incorporated.--Ger. 581,990.

This acid and its salts are used with acid washing agents to make mothproofing detergent compositions.-U. S. 2,082,188; 2,130,435.

An ingredient of a mothproofing solution made as follows: 240 pounds of triethanolamine are run in a slow stream with stirring into about 330 pounds of accurately assayed 35 percent hydrosilicofluoric acid. An excess of the base should never be present, and the neutral or only very slightly acid solution should be clear or only slightly turbid. Twenty pounds of 50 percent hydrofluoric acid are then added, followed by a clear solution of 140 pounds of $\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$ in 175 pounds of water. A solution of 5 pounds of lauryl sulfate in 25 pounds of water is then added, and the total weight of the solution brought up to 1000 pounds with water. The final pH of this solution should be about 2.-U. S. 2,176,894.

HYDROFLUORIC ACID, METALLO-, DIAZONIUM SALTS OF

An example is titanous dihydrohexafluoride.-U. S. 1,825,729.

HYDROFLUOSILICIC ACID

Salts of quaternary phosphonium bases with hydrofluosilicic acid are used for mothproofing.-Ger. 506,987.

An acid soap mixed with hydrofluosilicic acid or a soluble salt of it (e.g. Na_2SiF_6) is used for mothproofing wool.-Brit. 366,090.

The use of alkaline fluosilicates for enhancing the disinfecting power of tar acids and heavy oils is referred to in Brit. 366,090.

This is one of the materials claimed in Brit. 173,536; Ger. 347,849; Fr. 518,821; and U. S. 1,682,975 for mothproofing wool.

One kilogram of wool is boiled one-half hour with 200 cc. of a 10 percent solution of hydrofluosilicic acid, 20 grams sulfuric acid and 100 grams Glauber's Salt.-Ger. 346,598.

HYDROGEN PEROXIDE

Animal fibers are purified and protected against animal and vegetable parasites by treatment with hydrogen peroxide. The fibers are dried under such conditions that removal of hydrogen peroxide from the mass is incomplete. This retained active oxygen renders animal or vegetable parasites harmless.-Brit. 347,292; Fr. 688,418.

Wool is mothproofed with an aqueous solution (0.03 to 10 percent by weight) of hydrogen peroxide kept at a pH of 3 to 6.5 and preferably 5 to 5.6.-Fr. 43,282; 1st addition to 688,418; Ger. 571,743; 597,182.

HYDROQUINONE

Ineffective.-Jackson and Wassell (18).

HYPOSULFITE

A mothproofing powder consists of 1 gram hydrosulfite, 80 grams dichlorobenzene, and 20 grams paraformaldehyde.-Jap. 78,953.

HYPOSULFITE, SODIUM

Wool shoddy which has recently been stripped by means of hydrosulfite does not appear to be as susceptible to moth damage as virgin wool.-Mullin (24).

IMIDOCARBONIC ACID, N-CHLORO-, ESTERS

Ger. 419,464.

IMIDOHALIDES, CYCLIC, CONDENSATION PRODUCTS OF

Mothproofing compounds are prepared by the condensation of cyclic imidohalides with substituted amines and mercaptans belonging to the aliphatic, araliphatic or aromatic series, and with substituted phenols.-Fr. 831,977.

For example cyanurtrichloride, 1 mol, is reacted first with one mol of 3,4-dichloraniline, secondly with one mol of 4-amino-2',4',5'-trichlorodiphenylether-2-sulfonic acid and finally with one mol of 1-amino-3,4-dichlorobenzene-6-sulfonic acid.-Can. 387,255.

INDIGO

Wool dyed with indigo was badly damaged by clothes moth larvae and black carpet beetle larvae.-Minaeff (22).

IRON SESQUIOXIDE

An ingredient of a plaster composition repellent to moths.-U. S. 1,620,587.

ISATIN

May be condensed with phenols to make mothproofing agents.-Brit. 424,972; 491,182; Fr. 829,834; Fr. 43,866; 1st addition to 759,662.

ISATIN, 5,7-DIBROMO-

5,7-Dibromoisatin is condensed with ortho-chlorophenol (Fr. 43,866; 1st addition to 759,662) and sulfonated to form a water soluble mothproofing compound.-Brit. 424,972.

ISATINSULFONIC ACID

Mothproofing agents are obtained by the condensation of an isatin-sulfonic acid with phenols or homologs of phenols.-Fr. 759,662; U. S. 2,070,350.

ISATINSULFONIC ACID, N-BENZYL-

Condensed with thymol, amylphenol, or 6-chloro-m-cresol to form mothproofing agents.-Fr. 43,866; 1st addition to 759,662.

Condensed with p-chlorophenol to make a mothproofing agent.-Swiss 203,301.

ISATINSULFONIC ACID, N-(o-CHLOROBENZYL)-

The condensation product of this with thymol or 6-chloro-m-cresol is a mothproofing agent.-Brit. 424,972; Fr. 43,866; 1st addition to 759,662; U. S. 2,070,350.

5-ISATINSULFONIC ACID

Compounds useful for protection against moths are made by condensing 5-isatinsulfonic acid with a derivative or homologue of phenol substituted in the nucleus by an alkyl group having three or more carbon atoms, or by one or two halogen atoms, or simultaneously by halogen and an alkyl group.-Brit. 424,967.

Condensed with amyl-orthochlorophenol to form a mothproofing agent.-Fr. 43,866; 1st addition to 759,662.

Condensation products of this with phenols or their alkylated or halogenated substitution products are used for mothproofing. Examples are thymol, amylphenol, amyl-o-cresol and 6-chloro-m-cresol.-Ger. 641,625; U. S. 2,070,351; 2,070,353; Fr. 759,662; Swiss 165,377.

Mothproofing agents are made by condensing 5-isatinsulfonic acid with 2,4-dichlorophenol.-Fr. 759,662; Swiss 165,031.

Amylphenol.-Fr. 759,662.

p-Chlorophenol.-Fr. 759,662; Swiss 165,020.

6-Chloro-m-cresol.-Fr. 759,662; Swiss 165,032.

tert-Amylphenol.-Swiss 167,697.

Thymol.-Fr. 759,662; Swiss 162,058.

5-ISATINSULFONIC ACID, 6-CHLORO-

Condensation product of 6-chloro-5-isatinsulfonic acid with p-chlorophenol, 6-chlorometacresol or 2,4-dichlorophenol are mothproofing agents.-Brit. 424,972; Fr. 43,866; 1st addition to 759,662; U. S. 2,070,352.

5-ISATINSULFONIC ACID, N-(2'-CHLOROBENZYL)-

Condensed with o-chlorophenol to make a mothproofing agent.-Swiss 203,302.

5-ISATINSULFONIC ACID, N-(4'-CHLOROBENZYL)-

Condensed with m-chloroanisole to make a mothproofing agent.-Swiss 203,305.

Condensed with p-chlorophenol to make a mothproofing agent.-Swiss 203,303.

5-ISATINSULFONIC ACID, N-ETHOXY-

N-Ethoxy-5-isatinsulfonic acid is condensed with amyl ortho-cresol or 6-chloro-meta-cresol to form mothproofing compounds.-Brit. 424,972; Fr. 43,866; 1st addition to 759,662.

7-ISATINSULFONIC ACID, 5-CHLORO-N-(4'-CHLOROBENZYL)

Condensed with p-chlorophenol to make a mothproofing agent.-Swiss 203,304.

1-ISATIN-alpha-TOLUENESULFONIC ACID

Condensed with thymol (Swiss 169,549) or with p-tertiary-amylphenol (Swiss 169,550), or with 6-chloro-meta-cresol (Swiss 169,551; Brit. 424,972; U. S. 2,070,350).

1-ISATIN-alpha-TOLUENESULFONIC ACID, CHLORODITHYMYL-

U. S. 2,070,350.

1-ISATIN-alpha-TOLUENESULFONIC ACID, DIAMYLPHENYL-

U. S. 2,070,350.

1-ISATIN-alpha-TOLUENESULFONIC ACID, DITHYMYL-

U. S. 2,070,350.

ISOBUTYLALCOHOL

A suitable solvent for the reaction products of boron trifluoride with organic materials.-Ger. 502,600.

ISOCAPROANILIDE, THIO-

Brit. 340,139; Fr. 39,013.

ISOPROPYL ALCOHOL

A solvent for:

Canada balsam, an ingredient in an adhesive mothproofing composition.-Brit. 463,725.

Monophenyl di-(orthoxenyl) phosphate.-U. S. 2,128,189.

ISOTHIOCYANIC ACID, ALLYL ESTER

A mixture of 2 to 4 parts of allylisothiocyanate with 98 to 96 parts carbon tetrachloride is used against clothes moths and other insects.-Fr. 805,530.

ISOVALERANILIDE, THIO-

Brit. 340,319; Fr. 39,013.

KEROSENE

Kerosene has proved very effective in preventing infestation of larvae.-Scott, Abbott, and Dudley (38); Mullin (24,25).

The fumes of kerosene are ineffective against clothes moths.-Benedict (10).

Kerosene is recommended for treating cracks and hiding places for the killing of fabric pests.-Back (5); Gershenfeld (16).

Kerosene is one of the solvents used to dissolve cinchona alkaloids for mothproofing purposes.-U. S. 1,615,843 and 1,694,219.

Formaldehyde in kerosene has been employed for protecting leather from insect attack.-Brit. 221,599.

KETONE, CYCLOHEXYL 4-HYDROXYPHENYL

Brit. 495,639; Fr. 48,395, 1st addition to 802,508.

KETONES

Aqueous ketones or mixtures of alcohols and ketones with water are used as solvents for inorganic or organic fluorine compounds for mothproofing wool.-Ger. 485,101.

Solvents for:

Diphenyl ether and its derivatives.-Swiss 199,985.

Diphenyl oxide and diphenyl sulfide.-Brit. 502,320.

Halogenated benzene derivatives.-Brit. 484,448.

Mercaptals and mercaptols (formed by condensing mercaptans with unsulfonated aldehydes or ketones).-Brit. 491,182; Fr. 829,834.

Thianthrene and its derivatives.-Brit. 467,701; Ger. 665,215;

U. S. 2,123,572.

KETONES, CONDENSATION PRODUCTS OF, WITH MERCAPTANS

Brit. 491,182.

KETONES, HALOGENATED

Mentioned as known insecticides.-U. S. 2,129,025.

KETONES, HYDROXYDIPHENYL

Hydroxydiphenyl ketones may be condensed with aralkyl compounds and subsequently sulfonated to form mothproofing products.-Brit. 334,886.

KIESELGUHR

Used as a diluent for:

Aromatic hydroxy mothproofing compounds.-Brit. 495,639; 497,214.

Ethers or esters of aromatic hydroxy compounds.-Brit. 495,761.

Halogenated phenols.-Brit. 474,600.

Quaternary phosphonium salts.-U. S. 1,921,364.

Solid wax-cyclohexene oxide mixtures.-U. S. 2,101,587.

Goods are mothproofed by treating them with a finely powdered, non-volatile active substance which may be used alone or admixed with a finely divided material, such as kieselguhr, talcum, or wood meal.-Aust. 114,458; Dutch 20,526.

LACTIC ACID, BUTYL ESTER

A solvent for copper oleate.-Brit. 367,913.

LANTHANUM ACETATE

Fabrics are rendered moth-, mildew-, mold- and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and 66 pounds of lanthanum acetate in 250 gallons of water.-U. S. 1,921,926.

LANTHANUM SALTS

The following lanthanum salts are mentioned specifically for mothproofing: ricinoleate, resinate, stearate, oleate, linoleate, and tungate. For example: Woolen fabrics may be protected from attacks by clothes moths, by impregnating the fabric with a 1 percent solution of lanthanum stearate in benzene.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

Water soluble salts of lanthanum, such as the acetate or chloride have been employed to precipitate casein in woolens for mothproofing purposes.-U. S. 1,688,717.

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a lanthanum salt.-U. S. 1,799,047.

Lanthanum oleate is ineffective for mothproofing.--Jackson and Wassell (18).

LAURIC ACID, 4,5-DICHLORO-2-HYDROXYPHENYL ESTER

LAURIC ACID, 4'-HYDROXYBIPHENYLYL ESTER

Brit. 497,214; Fr. 48,395; 1st addition to 802,508.

LAVENDER FLOWERS

Lavender flowers are of no value in preventing moth infestation.--Scott, Abbott and Dudley (38); Back (5); Mullin (24).

Mixed with naphthalene to make a moth repellent.--Swiss 186,764.

LAVENDER OIL

Oil of lavender proved effective in protecting flannel from moth infestation.--Scott, Abbott and Dudley (38); Mullin (24,25).

Lavender oil tends to drive off the adult moths.--Sachs (35).

LEAD CARBONATE

Lead carbonate, dusted, proved ineffective against clothes moth larvae.--Scott, Abbott and Dudley (38); Back (5); and Mullin (24).

LEAD OXIDE

Lead oxide, dusted, proved ineffective against clothes moth larvae.--Scott, Abbott and Dudley (38); Back (5); and Mullin (24).

LEAD SALTS

Textiles are made waterproof, mothproof and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a lead salt.--U. S. 1,799,047.

The chloride or acetate of lead is used to precipitate casein in fabrics for mothproofing purposes.--U. S. 1,688,717.

LEATHER

Shavings of Russian leather should be placed among the clothes when they are laid aside for the summer.-Packard (27).

LIGROIN

A solvent for thio compounds used for mothproofing wool.-Brit.

340,319.

A mixture of ligroin and cyclohexanone is a suitable solvent for:

The condensation product of p-chlorophenol with formaldehyde.-

Brit. 316,900.

The condensation product of cyclohexanone with phenol.-Brit.

326,451.

4,4'-Dihydroxy-diphenylcyclohexane.-Fr. 681,795; Ger. 530,331.

2,2'-Dihydroxy-5,5'-dichloro-diphenylmethane.-Aust. 118,640;

Ger. 503,256.

Trichlorodihydroxy-diphenylmethane.-Ger. 513,387.

LIME

Used with casein, sodium fluoride, Canada balsam and isopropyl alcohol to make an adhesive mothproofing composition.-Brit. 463,725.

LINOLEIC ACID

LINOLENIC ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium, and thallium) of linoleic acid and linolenic acid are used for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

LINSEED OIL, SULFONATED

Used as a wetting ingredient for mothproofing purposes.-U. S.

1,634,793.

LITHIUM FLUORIDE

U. S. 1,634,790; and 1,634,791.

LITHIUM FLUOSILICATE

U. S. 1,634,790.

LITHIUM FLUOSULFONATE

Used for preserving textile fabrics and other porous organic materials.-U. S. 1,448,276.

"LOROL" THIOCYANATE

"Lorol" is a commercial product consisting of the midfraction of the long chain alcohols produced by carboxyl hydrogenation of coconut oil and consists principally of n-dodecanol. Details of mothproofing tests with this material are given in U. S. 2,098,942.

LUPINES

Alkaloidal salts from Lupinus are used in mothproofing solutions. Examples are: (1) 10 parts of the alkaloidal salts and 1 part of chrome alum; (2) 10 parts of the alkaloidal salts and 2 parts of aluminum sulfate; (3) 10 parts of the alkaloidal salts, 1 part of alum, and 1 part of titanium sodium fluoride; (4) 10 parts of the alkaloidal salts, 2 parts of alum, and 1 part of boric acid.-U. S. 1,885,292.

Wool is protected by saturating it in a 1 to 2 percent solution of an insecticide made by extracting saponins from quillai bark and alkaloids from lupinus seeds, especially Lupinus albus, angustifolius, luteus, niger and perennis.-Brit. 230,203; Ger. 421,100; U. S. 1,610,167.

An improved insecticide consists of an alkaloidal extract of lupines in combination partly with an inorganic acid and partly with an extract of quillaya bark or other source of saponin glucosides.-Can. 247,378.

Reference is made to the use of the bitter principles and alkaloids from lupines for mothproofing.-Ger. 488,307.

MAGNESIA

A neutralizing agent for use with methyl formate-magnesium chloride and other addition compounds.-Brit. 426,398.

MAGNESIUM BROMIDE, ANHYDROUS

Used to form addition compounds with acetone, acetaldehyde, ether or acetonitrile, which addition compounds are decomposed by water and give off toxic vapors used to fumigate verminous clothing.-Brit. 426,398.

MAGNESIUM CARBONATE

A mothproofing composition comprises about 3 to 5 percent each of chlorax (a commercial mixture of isomeric chlorohydroxyxylenes) and musk xylol (trinitroisobutylxylene) intimately mixed with about 94 to 90 percent of an inert filler such as light magnesium carbonate. The mixture preferably is ground to a fineness of 200 to 300 mesh.-Brit. 389,860.

MAGNESIUM CHLORIDE

Raw horse hair is immersed in a warm, alkaline, 2 percent solution of a sulforicinoleate for 12 hours. Then, without rinsing, it is immersed in a solution containing ammonium stearate to the amount of 5 percent by weight of the material treated. The hair is lightly squeezed and then immersed in a suitable solution of magnesium chloride. It is finally subjected to prolonged rinsing, washing and drying. After this treatment it is waterproof and insect proof.-Brit. 403,957.

MAGNESIUM CHLORIDE, ANHYDROUS

See magnesium bromide.-Brit. 426,398.

MAGNESIUM FLUOSILICATE

A mothproofing concentrate contains about 16 to 20 percent of magnesium fluosilicate and about 5 to 10 percent of magnesium benzene-sulfonate.-U. S. 2,291,473.

Used in the form of a 2 to 10 percent aqueous solution emulsified in a liquid hydrocarbon.-U. S. 2,127,252.

MAGNESIUM OLEATE

Ineffective.-Jackson and Wassell (18).

MAGNESIUM SULFATE

Magnesium sulfate and also magnesium sulfate in water, followed by ammonium fluoride or sodium fluoride in water are ineffective for mothproofing.-Jackson and Wassell (18).

"A rumor has been persistent during the past several years that Epsom salts will protect against clothes moths. Fabrics saturated with strong water solutions of Epsom salts or fabrics upon which Epsom salt crystals have been scattered, have been fed upon by fabric pests".-Back and Cotton (6,8).

"Employed in closed places, Epsom salts in crystalline form possess a greater efficiency than naphthalene or pyrethrum powder and does not possess an objectionable odor".-Quoted by Gershenfeld (16).

An anonymous (4) writer refers to the reported successful use of magnesium sulfate as a moth repellent.

MALONIC ACID, ETHYL ESTER

The reaction product of malonic ester with boron trifluoride is used to mothproof wool.-Ger. 502,600.

MANGANESE DIOXIDE

One of the constituents of a solution used for mothproofing hair.-

U. S. 387,579.

MARTIUS YELLOW

This is 2,4-dinitro-1-naphthol and is toxic to moth larvae, but is made harmless by conversion into its sulfonic acid.-Brit. 484,448.

MENTHOL

An ingredient of an artificial cedar board.-Ger. 470,458.

Clothing treated with an emulsion of menthol in soap solution will protect the wearer from the stings of gnats.-Ger. 557,760.

MERCAPTALS

Formed by condensing mercaptans with unsulfonated aldehydes they are used as 2 percent solutions in organic solvents for mothproofing furs, feathers or wool.-Brit. 491,182; Fr. 829,834.

MERCAPTANS, CONDENSATION PRODUCTS OF, WITH ALDEHYDES AND KETONES

Brit. 491,182.

MERCAPTANS, HALOGENATED, CONDENSATION PRODUCTS OF

Water-insoluble non-volatile condensation products of halogen-substituted mercaptans with compounds with a reacting carbonyl group but free of sulfonic acid groups are used to mothproof wool.-Swiss 194,375.

MERCAPTOLS

Formed by condensing mercaptans with unsulfonated ketones they are used as 2 percent solutions in organic solvents for mothproofing furs, feathers or wool.-Brit. 491,182; Fr. 829,834.

MERCURIC CHLORIDE

"The cloth lining of carriages can be secured forever from the attacks of moths by being washed or sponged on both sides with a solution of the corrosive sublimate of mercury in alcohol, made just strong enough not to leave a white stain on a black feather."-Quoted by Packard (27).

Mercuric chloride in alcoholic solution is both preventive and remedial against clothes moths.-Mullin (24,25).

Larvae (Tineola biselliella) placed in Petri dishes with a piece of cloth soaked in corrosive sublimate ate of the cloth as shown by the color of their alimentary canal and the feces, but lived on for weeks apparently uninjured.-Benedict (10).

Corrosive sublimate is dissolved in glycerin and added to paste used to fasten together sheets of paper board containing tobacco or tobacco juice and designed to protect woolen articles from moths.-U. S. 88,519.

MERCURY SALTS

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a mercury salt.-U. S. 1,799,047.

Mercury salts incorporated in fiber building board render it rot-proof and termite proof.-U. S. 1,884,367.

Casein is precipitated in fabrics for mothproofing purposes with water-soluble salts of mercury, such as the acetate or chloride.-U. S. 1,688,717.

METAL ACETATE

Fabrics are rendered moth-, mildew-, mold-, and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and a solution of 66 pounds of metal acetate in 250 gallons of water.-U. S. 1,921,926.

METALDEHYDE

Ineffective.-Jackson and Wassell (18).

METALLO-ORGANIC COMPOUNDS

Organic compounds of phosphorus, arsenic, antimony, and bismuth are deposited on wool to mothproof it.-U. S. 1,766,819.

METHANE, DIARYL DERIVATIVES

The I. G. Farbenind. A.-G., claims for mothproofing purposes diarylmethane derivatives which contain at least 2 phenyl groups, 2 hydroxyl groups ortho to the carbonium atom, and 2 halogen atoms para to the hydroxyl groups.-Swiss 134,012.

METHANE, HYDROXYDI- OR TRIARYL DERIVATIVES

A large number of these compounds, especially halogenated and sulfonated derivatives, are employed for mothproofing.

Aust. 124,284.

Brit. 12,243 ('29)	316,900	337,808	
14,787 "	330,893	337,832	
24,450 "	330,894	383,493	
24,452 "	335,547		
Fr. 37,924	Ger. 503,256	537,768	542,068
39,334	521,205	539,182	542,069
39,337	530,219	540,208	544,293
681,795	535,152	541,629	595,106
758,192	536,551	542,067	

Hung. 96,776

Swiss 134,012

U. S. 1,880,566
1,906,890
1,910,938
1,910,488
1,948,894
1,971,436

METHANE, HYDROXYDIPHENYL DERIVATIVES

Brit. 334,886.

METHANE, BIS(BROMOCHLOROHYDROXYPHENYL)-

Brit. 338,126.

METHANE, BIS(3-BROMO-5-CHLORO-2-HYDROXYPHENYL)-

Ger. 513,388.

METHANE, BIS(5-BROMO-2-HYDROXYPHENYL)-

The condensation product obtained from 2 moles of p-bromophenol and 1 mole of formaldehyde is useful in mothproofing wool, hair, feathers, and the like.-Ger. 503,256; Hung. 96,776; Swiss 134,012.

METHANE, BIS(2-n-BUTOXY-5-CHLOROPHENYL)-

A cyclohexanone-benzine solution of this compound is employed to mothproof goods. The material is so treated that 2 to 3 percent of the active substance remains in it after drying.-Fr. 758,192; Ger. 595,106; U. S. 2,053,610.

METHANE, BIS(2-n-BUTOXY-3,5-DICHLOROPHENYL)-4-CHLOROPHENYL-

METHANE, BIS(2-n-BUTOXY-3,5-DICHLOROPHENYL)-2,4,5-TRICHLOROPHENYL-

Fr. 758,192; Ger. 595,106; U. S. 2,053,610.

METHANE, BIS(4-CHLORO-1-HYDROXY-2-NAPHTHYL)-

Wool is treated with 4 percent of its weight of this product in a feebly alkaline or neutral aqueous solution.-Aust. 124,284; Ger. 506,989.

METHANE, BIS(2-CHLOROHYDROXYPHENYL)-

The condensation product of m-chlorophenol with formaldehyde is suitable for mothproofing. It is uncertain whether the CH_2 group is attached to the nuclei in ortho or para position to the hydroxy group.-

U. S. 1,906,890.

METHANE, BIS(2-CHLORO-6-HYDROXYPHENYL)-

The condensation product of m-chlorophenol and formaldehyde is claimed to protect animal fibers, feathers, furs, etc. against pests.-

Aust. 124,284; Ger. 536,551.

METHANE, BIS(3-CHLORO-2-HYDROXYPHENYL)-3-CHLOROPHENYL-

Brit. 333,561.

METHANE, BIS(5-CHLORO-2-HYDROXYPHENYL)-

Fr. 39,334; Ger. 539,182; 540,208; Hung. 96,776; U. S. 1,948,894.

This compound, made by condensing formaldehyde with p-chloro-phenol, is dissolved in a mixture of cyclohexanone and ligroin and used for mothproofing wool.-Aust. 118,640; Brit. 316,900; Ger. 503,256; Swiss 134,012.

The monopotassium salt of this compound may be used in aqueous solution.-Aust. 118,640; Brit. 316,900; Ger. 503,256.

A 10 percent by weight solution of this may be used in a mixture of butyl alcohol and carbon tetrachloride.-Aust. 118,640.

METHANE, BIS(5-CHLORO-2-HYDROXYPHENYL)-2-CHLOROPHENYL-

Brit. 337,832; Fr. 39,334; Ger. 540,208.

METHANE, BIS(5-CHLORO-2-HYDROXYPHENYL)-4-CHLOROPHENYL-

Ger. 540,208; Hung. 96,776.

METHANE, BIS[p-(5-CHLORO-2-HYDROXYPHENYL)CYCLOHEXYL]-

Brit. 495,639; Fr. 48,395; 1st addition to 802,508.

METHANE, BIS(5-CHLORO-2-HYDROXYPHENYL)-2,6-DICHLORO-3-HYDROXYPHENYL-

Hung. 96,776.

METHANE, BIS(5-CHLORO-2-HYDROXYPHENYL)-2,6-DICHLOROPHENYL-

Brit. 337,832; Fr. 39,334; Ger. 540,208.

METHANE, BIS(5-CHLORO-2-HYDROXYPHENYL)PHENYL-

The condensation product of 2 mols of p-chlorophenol with 1 mol of benzaldehyde is useful for mothproofing wool, hair, feathers, and the like.-Hung. 96,776.

METHANE, BIS(5-CHLORO-2-HYDROXYPHENYL)-2,4,6-TRICHLORO-3-HYDROXYPHENYL-

Hung. 96,776.

METHANE, BIS(5-CHLORO-2-HYDROXY-m-TOLYL)-

Ger. 503,256; Hung. 96,776.

METHANE, BIS(2-CHLOROPHENYLSULFONYL)-

Brit. 484,448.

METHANE, BIS(3,5-DICHLORO-2,6-DIHYDROXYPHENYL)-

Ger. 503,256; Swiss 134,012.

METHANE, BIS(DICHLOROHYDROXYPHENYL)-, CHLORINATED.

This product is useful in combating clothes moths, bacteria, mold, etc.-Ger. 544,293.

METHANE, BIS(3,5-DICHLORO-2-HYDROXYPHENYL)-

Brit. 453,053; Ger. 503,256; Swiss 134,012; Swiss 135,166.

METHANE, BIS(3,5-DICHLORO-4-HYDROXYPHENYL)-

Wool is mothproofed by treatment with 2 to 3 percent of its weight of this compound dissolved in alkali.-Aust. 124,284; Ger. 506,989.

METHANE, BIS(3,5-DICHLORO-2-HYDROXYPHENYL)-2,4,6-TRICHLOROPHENYL-

Ger. 503,256; Swiss 134,012.

METHANE, BIS(5-FLUORO-2-HYDROXYPHENYL)-

The condensation product of p-fluorophenol and formaldehyde is a mothproofing agent.-Ger. 537,768.

METHANE, BIS(HYDROXYTOLYL)-, BROMINATED

Ger. 544,293.

METHANE, BIS(2-HYDROXY-m-TOLYL)-

Ger. 506,989.

METHANE, BIS(2,4,6-TRICHLORO-3-HYDROXYPHENYL)-

Toxic to the caterpillars of clothes moths, to bacteria and to fungi.-Brit. 383,493; Ger. 548,822; U. S. 1,971,436.

METHANE, BROMOHYDROXYDIARYL-

METHANE, BROMOHYDROXYTRIARYL-

METHANE, CHLOROHYDROXYDIARYL-

Brit. 338,126.

METHANE, 5-CHLORO-2-HYDROXYDIPHENYL-

METHANE, 5-CHLORO-2-HYDROXYPHENYL-p-TOLYL-

U. S. 1,880,566.

METHANE, CHLOROHYDROXYTRIARYL-

Brit. 338,126.

METHANE, 2-CHLOROPHENYL-BIS(3,5-DICHLORO-2-HYDROXYPHENYL)-

Fr. 39,334; Ger. 503,256; 541,629.

METHANE, (p-CHLOROPHENYLSULFONYL)(2,5-DICHLOROPHENYLMERCAPTO)(p-TOLYLSULFONYL)-

METHANE, (p-CHLOROPHENYLSULFONYL)(2,5-DICHLOROPHENYLSULFONYL)(p-TOLYLSULFONYL)-

Brit. 484,448.

METHANE, 3,5-DICHLORO-2-HYDROXYDIPHENYL

Brit. 337,808; 338,126.

METHANE, 3,5-DICHLORO-2-HYDROXYPHENYL-6-HYDROXY-m-TOLYL-

U. S. 1,948,894.

METHANE, DIPHENYL-

The sulfonic and carboxylic acid derivatives of diphenylmethane are claimed for mothproofing purposes in Ger. 344,266.

A solution of 10 parts by weight of diphenyl methane in 90 parts by weight of solvent naphtha killed 90 to 100 percent of moth larvae placed in a pillow and sprayed.-U. S. 2,005,797.

METHANE, HALOHYDROXYDIARYL-

METHANE, HALOHYDROXYTRIARYL-

Mentioned as known mothproofing agents.-Brit. 422,923; U. S. 2,053,610.

METHANE, 2-HYDROXYDIPHENYL-

o-Hydroxydiphenylmethane is brominated to form 2-hydroxy-3,5-dibromodiphenylmethane, a product useful for mothproofing. By means of sulfuryl chloride it is converted into 3,5-dichloro-2-hydroxydiphenylmethane, another mothproofing agent.-Brit. 338,126.

The condensation product of o-benzylphenol with triphenylphosphine oxide, m.p. 88-89°, is used to mothproof wool.-Ger. 521,205.

METHANE, 2,3',4,5',6-PENTACHLORO-2',3-DIHYDROXY-3"-NITROTRIPHENYL-

Brit. 383,493; Ger. 548,822; U. S. 1,971,436.

METHANE, 2,3',4,5',6-PENTACHLORO-2',3-DIHYDROXY-4"-NITROTRIPHENYL-

Brit. 383,493; U. S. 1,971,436.

METHANE, TETRACHLOROHYDROXYDIPHENYL-

U. S. 1,880,566.

METHANE, 2',3,5,6'-TETRACHLORO-2-HYDROXYDIPHENYL-

A woolen fabric is treated with a solution containing the sulfonated condensation product from 2,4-dichlorophenol and 2,6-dichlorobenzylchloride in such a manner that after drying there remains 3 percent on the fabric, which by this treatment is rendered mothproof.-

U. S. 1,910,938.

METHANE, 2,4,5,5'-TETRACHLORO-2'-HYDROXYDIPHENYL-

U. S. 1,880,566.

METHANE, TRICHLORODIHYDROXYDIPHENYL-

A 10 percent solution of this in a mixture of cyclohexanone and ligroin is used for mothproofing wool.-Ger. 513,387; Fr. 39,340, 5th addition to 651,646.

METHANE, 3,5,5'-TRICHLORO-2,2'-DIHYDROXYDIPHENYL-

Ger. 539,182; U. S. 1,948,894.

METHANE, TRIS(p-CHLOROPHENYLSULFONYL)-

Brit. 484,448.

METHANEDISULFONIC ACID, BIS(CHLOROXYDROXY PHENYL)-

Brit. 337,808.

METHANES, HYDROXYDIARYL-

Ger. 513,387.

These compounds, useful for mothproofing wool, are made by condensing aldehydes with mixtures of phenols.-Fr. 39,328, second addition to 651,646; Fr. 39,340, 5th addition to 651,646.

METHANES, HYDROXPOLYARYL-

Fr. 38,340, 5th addition to 651,646 and Fr. 39,328, 2nd addition to 651,646.

METHANES, HYDROXYTRIARYL-

Ger. 513,387.

METHANESULFONIC ACID, PENTACHLORODIHYDROXYTRIPHENYL-

Fr. 39,340; 5th addition to 651,646.

METHANESULFONIC ACIDS, HALO-HYDROXY-TRIPHENYL-,PROPENE OXIDE DERIVATIVES

U. S. 2,202,169.

METHANESULFONIC ACIDS, TRIARYL-

Derivatives of these are valuable mothproofing compounds.-Ger.
604,980; 618,033.

METHANESULFONYL FLUORIDE

Used as a fumigant for combating the carpet beetle at the rate of
1.5 grams per cubic meter of enclosed space for 24 hours.-U. S. 2,114,577.

METHANESULFONYL FLUORIDE, CHLORO-

U. S. 2,114,577.

METHYL ACETATE

Forms addition compounds with antimony chloride, boron fluoride,
calcium chloride, magnesium chloride, and titanium chloride.-Brit. 426,398.

METHYLAL

Methylal is condensed with p-chlorophenol to form a product useful
for mothproofing purposes.-Brit. 337,832.

METHYLAL, COMPOUND WITH CALCIUM CHLORIDE

The addition compound of methylal with calcium chloride, which is
decomposed by water and gives off the vapor of methylal is used to fumi-
gate verminous clothing.-Brit. 426,398.

METHYL ALCOHOL

A solvent for:

Aryloxy alkylols.-U. S. 2,134,001.

Monophenyl di(ortho-xenyl) phosphate.-U. S. 2,128,189.

METHYL CHLORIDE

Liquefied methyl chloride is added to a mothproofing solution and aids in the penetration of the solution within the fabric to which it is applied.-U. S. 1,901,960.

METHYLENE BLUE

Woolen material dyed with methylene blue was badly damaged by clothes moth larvae and black carpet beetle larvae.-Minaeff (23).

METHYLENE DIACETATE

May be condensed with p-chlorophenol to make a mothproofing compound.-Brit. 337,832.

METHYL FORMATE

Same as for methyl acetate.-Brit. 426,398.

METHYL ORANGE

The changes in methyl orange on passing through the alimentary tract of clothes moth larvae were determined. Fabrics treated with methyl orange were badly damaged by the larvae.-Minaeff (22).

METHYL SULFIDE, - COMPOUND WITH CADMIUM IODIDE

METHYL SULFIDE, - COMPOUND WITH COPPER CHLORIDE

Brit. 426,398.

METHYL VIOLET

METHYL VIOLET R.

Wool dyed with either of these dyes was found to offer considerable resistance to clothes moth larvae and to black carpet beetle larvae, although by no means can it be called mothproof.-Minaeff (22).

MINERAL OIL

Used as a softening agent in an adhesive mothproofing composition to make the coating more pliable.-Brit. 463,725.

MINERAL OILS, SULFONATED

Used to emulsify in water a solution of chlorinated naphthalene in hydrogenated naphthalene.-U. S. 2,136,020.

MOLYBDIC ACID

Brit. 173,536;Fr. 518,821;Ger. 347,721.

MYRISTIC ACID, PHENYL ESTER

Fr. 802,508.

MYRISTYL SULFATE

Used as a wetting agent in a mothproofing solution containing tri-ethanolamine fluosilicate.-U. S. 2,176,894.

MYRRHIC ACID

Wool, 100 parts by weight, is mothproofed by soaking overnight in a bath containing 3000 parts by weight of water, 1 part of fluotitanic acid, 2 parts of zinc sulfate, 20 parts of sodium sulfate, and 3 parts of myrrhic acid.-Swed. 59,841.

NAPHTHA

A solvent for:

Aluminum naphthenate.-U. S. 2,078,458.

Amylnaphthalenesulfonic acid.-Brit. 313,043.

p-tert-Amyl phenolic salt of dixylyl guanidine.-U. S. 2,145,214.

Biphenyl, bibenzyl, diphenylmethane and similar compounds; also for these compositions plus cinchona alkaloids.-U. S. 2,005,797.

Brucine anilide.-U. S. 2,015,533.

Brucine oleate-phenyl salicylate mixture.-Brit. 327,009.

3-Chloro-4-hydroxydiphenyl.-U. S. 1,977,412.

Cinchona alkaloids.-Fr. 625,380; Swiss 125,139; U. S. 1,615,843;
1,694,219.

Cube extract.-Can. 338,896.

Derris extract.-U. S. 1,854,948.

Dixylyl guanidine.-U. S. 2,157,854.

Guanidine fatty acid salts.-U. S. 1,915,922.

Haiari extract.-Can. 338,897.

Quinoidine fatty acid salts.-U. S. 1,694,219.

Naphtha is mentioned as a moth repellent.-Jackson and Wassell (18).

NAPHTHALDEHYDES

Naphthaldehydes may be condensed with meta-halogenated phenols (Brit. 330,894) or with p-alkylated phenols (Brit. 330,893) to form products useful for mothproofing wool.

NAPHTHALDEHYDES, HYDROXY-

Condensation products of hydroxy naphthaldehydes with p-chlorophenol or p-bromophenol or their derivatives are used to protect textiles against Anthrenus vorax, Dermestes and other pests.-Fr. 651,646; Hung. 96,776.

NAPHTHALENE

Naphthalene kills all stages of the clothes moth in closed places.-Scott, Abbott and Dudley (38); Benedict (10).

Naphthalene sewed into upholstered furniture is of no value in protecting it against fabric pests.-Back and Cotton (6).

Naphthalene is very effective in the form of flakes or moth balls for protecting clothing in closets, trunks and tight chests.-Back (5).

Although cedar chests may be regarded as protectors against clothes moths, attention is called to the fact that a chest of ordinary wood, if as tightly constructed, would be just as effective, provided the clothing were as thoroughly cleaned, brushed and sunned and from 1 to 2 pounds of good grade naphthalene were packed within.--Back and Rabak (9).

The use of naphthalene to combat clothes moth is well known and is referred to in the following patents: Brit. 19,688 of 1912; 173,536; 230,203; 413,445; Fr. 774,692; Ger. 258,405; 503,256; 344,266; 353,682; 357,063; Swed. 59,841; Swiss 201,548; U. S. 1,097,406; 1,216,356; 1,562,510; 1,610,167; 1,634,002; 1,655,540; 2,017,159; 2,091,075; 2,101,587; 2,184,147.

Naphthalene as a moth preventive or repellent is mentioned by Clark & Craft (13); Gershenfeld (16); Hecke (17); Kingzett (19); Meckbach (21); Mullin (24,25); Sachs (32,33,35,36); Smith (39); White, Fulton and Cranor (42).

Naphthalene and sulfur mixed with beta-naphthol is used against clothes moths.--Ger. 411,345.

Gypsum blocks are soaked in a volatile disinfectant, for example, formaldehyde, or phenol, then in melted naphthalene, and then in paraffin for use against moths and other pests.--Ger. 409,510.

Moths are destroyed by vaporizing a mixture of two-thirds naphthalene and one-third paraformaldehyde.--Ger. 363,852.

Naphthalene in resin soap is used to render paper and fabrics insect proof.--Brit. 13,071 of 1909.

Fumigating cones are made by melting 4 kg. naphthalene with 1 kg. alpha-Tetralon.--Ger. 357,063.

An apparatus for vaporizing naphthalene or naphthalene with camphor is described in Ger. 330,492.

Mixed with p-dichlorobenzene for combating moths.-Hung. 116,389; U. S. 1,097,406.

Mixed with o-, m- or p-dichlorobenzene, or mixtures of these, or monochlorobenzene, or flowers such as lavender flowers to make a moth repellent.-Swiss 186,764.

May be used in conjunction with methyl formate-magnesium chloride and other addition compounds.-Brit. 426,398.

An artificial cedar board or "moth wood" is made by impregnating wood with an odorous insecticidal material, such as naphthalene. A suitable mixture consists of 45 kg. dextrocamphor, 30 kg. beta-naphthol, 5 kg. naphthalene, 10 kg. paraffin, 8 kg. resin or resin soap, 2 kg. menthol, and 0.1 kg. oil red BX. This is melted and used to impregnate boards, for example, beechwood, in the usual way.-Ger. 470,458.

A holder for mothballs which permits their volatilization is described in U. S. 1,658,596.

NAPHTHALENE, CARBOXYLIC DERIVATIVES OF

Ger. 344,266.

NAPHTHALENE, CHLORINATED

Mentioned as effective mothproofing agents but ineffective against Anthrenus and Attagenus.-U. S. 1,955,207.

Solid or liquid chlorinated naphthalenes dissolved in hydrogenated naphthalene are emulsified in water with goulac or other agent and the aqueous emulsion used to impregnate textiles for the control of pests.-U. S. 2,136,020.

NAPHTHALENE DERIVATIVES

Mentioned as known materials for protecting skins against moths.--
Ger. 612,172.

Skins and leather are protected against moths by impregnating with naphthalene derivatives dissolved in a fatty oil, e.g., croton oil.--Ger. 615,759.

NAPHTHALENE, DIAZOAMINO COMPOUNDS

U. S. 1,874,524.

NAPHTHALENE, HYDROGENATED

A normally solid chlorinated naphthalene incorporated with hydrogenated naphthalene is emulsified in water with goulac or other agent and the aqueous emulsion used to impregnate textiles for the control of pests.--U. S. 2,136,020.

NAPHTHALENE, POLYCHLORINATED

A mothproofing solution is prepared by adding 1 part of a polychlorinated naphthalene to a solution of 1 part of monochloronaphthalene in 9 parts of kerosene.--U. S. 1,613,402.

NAPHTHALENE, 2,7-BIS(3,4-DICHLOROPHENYLSULFONAMIDO)-

U. S. 1,962,276.

NAPHTHALENE, BROMO-

Insects in fabrics are destroyed by treating with a solution of 1 part monobromonaphthalene dissolved in 10 parts of benzene.--Brit. 261,241.

Bromonaphthalene possesses insecticidal properties.--U. S. 1,613,402.

NAPHTHALENE, CHLORO-

A mothproofing solution is prepared by adding 1 part of a polychlorinated (e.g., trichlor or hexachlor) naphthalene to a solution of 1 part of monochloronaphthalene in 9 parts of kerosene.--U. S. 1,613,402.

Flies are killed by exposing them to a solution of monochloronaphthalene in a hydrocarbon oil. To destroy insects in fabrics, 1 part of monochloronaphthalene is dissolved in 10 parts of benzene and the fabric steeped in this solution. Fabrics may be treated with an emulsion of 50 parts of alcoholic ammonium oleate suitably diluted (1 part to 70-100 parts of water).-Brit. 261,241.

Fabrics are mothproofed by immersing them in an emulsion obtained by dilution of the following mixture: 25 parts monochloronaphthalene; 25 parts trichloronaphthalene; 47 parts water, and 3 parts ammonium oleate.-Brit. 253,993.

NAPHTHALENE, CHLORO-alpha-OXOTETRAHYDRO-

Ger. 377,587.

NAPHTHALENE, DECAHYDRO-

A solvent for solid chlorinated naphthalenes.-U. S. 2,136,020.

NAPHTHALENE, DICHLORO-

Textile yarns are treated with a mixture prepared by incorporating 10 percent dichloronaphthalene in soap and dissolving 2 ounces of this product in one gallon of water.-Brit. 253,993.

NAPHTHALENE, DICHLORO-alpha-OXOTETRAHYDRO-

Ger. 377,587.

NAPHTHALENE, DICHLOROTETRAHYDRO-

May be condensed with phenol sulfonic acids to form mothproofing products.-Brit. 334,886.

NAPHTHALENE, DINITRO-

Dinitronaphthalene, 9 parts by weight, is used with phenol, 2 parts, to impregnate cardboard and fabrics to protect them against moths.-U. S. 1,216,356.

Ineffective.--Jackson and Wassell (18).

NAPHTHALENE, FLUORO-

Ineffective.--Jackson and Wassell (18).

NAPHTHALENE, 1-FLUORO-

Applied as 1 percent solution or emulsion in benzene, benzine, alcohol or water.--U. S. 1,955,891.

NAPHTHALENE, 2-FLUORO-

U. S. 1,955,891.

NAPHTHALENE, HEXACHLORO-

Textile yarns are impregnated with a 5 percent solution of hexachloronaphthalene or trichloronaphthalene, or a mixture of the two, dissolved in benzol, for the purpose of making them undesirable as a habitation for insects. Timber is impregnated with a mixture of 1 part of the paraffin hydrocarbon sold as burning oil 300°; 1 part paradichlorobenzene and 1 part hexachloronaphthalene or mixture of higher chlorinated naphthalenes.--Brit. 253,993; U. S. 1,725,656.

A mothproofing solution is prepared by adding 1 part of hexachloronaphthalene to a solution of 1 part of monochloronaphthalene in 9 parts of kerosene.--U. S. 1,613,402.

NAPHTHALENE, NITRO-

Nitronaphthalene mixed with phenol is used to impregnate cardboard, which is placed among clothing or furs to protect them against moths.--U. S. 1,216,356.

1-Nitronaphthalene is ineffective against moths.-- Jackson and Wassell (18).

NAPHTHALENE, TETRACHLORO-

Ineffective.--Jackson and Wassell (18).

NAPHTHALENE, TETRAHYDRO-

A solvent for chlorinated naphthalenes.--U. S. 2,136,020.

NAPHTHALENE, TRICHLORO-

Textile yarns are impregnated with a 5 percent solution of hexachloronaphthalene or trichloronaphthalene, or a mixture of the two, dissolved in benzol, for the purpose of making them undesirable as a habitation for insects. Fabrics may be immersed in an emulsion obtained by diluting the following mixture: 25 parts monochloronaphthalene, 25 parts trichloronaphthalene, 47 parts water and 3 parts ammonium oleate. Timber which has been impregnated with zinc chloride by the known vacuum process is dried and then impregnated with a solution of trichloronaphthalene in a liquid organic solvent, for example, creosote. Trichloronaphthalene is stated to exert a specific toxic effect on the death watch beetle or on white ants.--Brit. 253,993; U. S. 1,725,656.

A mothproofing solution is prepared by adding 1 part of trichloronaphthalene to a solution of 1 part of monochloronaphthalene in 9 parts of kerosene.--U. S. 1,613,402.

2,7-NAPHTHALENEDIAMINE, BIS(3,4-DICHLOROPHENYLSULFONYL)-

Brit. 324,962; Fr. 686,721; Ger. 506,988.

NAPHTHALENEDICARBOXYLIC ACID, 2-SULFO-, AMYL ~~ESTER~~

Fr. 713,082 and 735,959.

1,4-NAPHTHALENEDIOL

Ineffective.--Jackson and Wassell (18).

2,6-NAPHTHALENEDISULFONANILIDE

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

NAPHTHALENEDISULFONIC ACID, CHLORO-

Salts (sodium, potassium, lithium or barium) of this acid are claimed as ingredients of a mothproofing composition.-U. S. 1,634,790; Brit. 235,914.

2,7-NAPHTHALENEDISULFONIC ACID, 4,5-DIHYDROXY-

Ineffective.-Jackson and Wassell (18).

1,5-NAPHTHALENEDISULFONYL CHLORIDE

Dissolved in a solvent such as trichloroethylene, trichlorobenzene, or a mixture of the two for mothproofing wool.-Ger. 449,126.

1,5-NAPHTHALENEDISULFONYL FLUORIDE

Ger. 450,418.

NAPHTHALENE-POLY-SULFONIC ACIDS, ALKYL DERIVATIVES OF

Fibrous materials are made proof against moth by treatment with preparations containing alkyl derivatives of a naphthalene mono- or poly-sulfonate or sulfonic acid. Salts of chromium, aluminum, zinc, titanium, etc. may be added, and the materials may be used in aqueous solution or in dry-cleaning solvents, such as hydrocarbons, benzene, naphtha, alcohol, and acetone. Other insect-repelling substances, such as sodium fluoride or silicofluoride, may be added. The preparation may be applied during dyeing or other processes.-Brit. 313,043.

NAPHTHALENES, POLYHALOGENATED-

Polyhalogenated naphthalenes are referred to as mothproofing agents which evaporate very slowly when incorporated in a fabric.-Brit. 366,090.

1-NAPHTHALENESULFONAMIDE, 4-CHLORO-N-p-CHLOROPHENYL-

U. S. 1,962,276.

NAPHTHALENESULFONIC ACID

Naphthalene 5-sulfonic acid is ineffective in mothproofing wool.-

Fr. 670,674; Ger. 504,886.

NAPHTHALENESULFONIC ACID, ALKYL-

Brit. 313,043.

NAPHTHALENESULFONIC ACID, DIBUTYL-

Woolen material is made resistant to bacteria by treating it for one-half hour at 50° C. in a bath containing 10 grams dibutyl naphthalene sulfonic acid per liter.-Ger. 537,024.

NAPHTHALENESULFONIC ACID, ISOPROPYL-, SODIUM SALT

Plush upholstery is mothproofed by spraying it with a solution of 4 grains per liter of sodium fluosilicate and 1 grain of the sodium salt of isopropyl naphthalene sulfonic acid.-Brit. 285,825; Ger. 507,897.

1-NAPHTHALENESULFONIC ACID, ALUMINUM SALT

U. S. 1,494,085 and 1,515,182.

1-NAPHTHALENESULFONIC ACID, ZINC SALT

One of the ingredients of the mothproofing compositions claimed in U. S. 1,494,085 and 1,515,182.

1-NAPHTHALENESULFONIC ACID, 5-FLUORO-

A 0.4 percent aqueous solution of 1-fluoro-naphthalene-5-sulfonic acid is used for mothproofing wool.-Brit. 333,583; Fr. 670,674; Ger. 504,886.

2-NAPHTHALENESULFONIC ACID, SALTS OF

Salts (sodium, potassium, lithium, and barium) of naphthalene 2-sulfonic acid, chloronaphthalene sulfonic acid, and chloronaphthalene disulfonic acid are claimed for mothproofing.--Brit. 235,914; U. S. 1,634,790.

The aluminum and zinc salts are claimed in U. S. 1,494,085 and 1,515,182.

2-NAPHTHALENESULFONIC ACID, CHLORO-

Salts (barium, lithium, potassium and sodium) of this acid are claimed as ingredients of a mothproofing composition.--Brit. 235,914; U. S. 1,634,790.

NAPHTHALENESULFONIC ACIDS, ALKYL-

Alkyl naphthalene sulfonic acids and their salts are mentioned as examples of adhesives and fillers to be used with aromatic thiocyanates as mothproofing agents and as aphicides.--Brit. 325,910.

Wool is carbonized to render it resistant to bacteria by treating it with solutions of alkylated naphthalene sulfonic acids.--Ger. 537,024.

NAPHTHALENESULFONYL CHLORIDE

Dissolved in trichloroethylene, trichlorobenzene, or a mixture of the two for mothproofing wool.--Ger. 449,126.

NAPHTHALENETHIOL, TETRAHYDRO-

This is condensed with benzaldehyde-ortho-sulfonic acid or other aromatic aldehyde-or ketone-sulfonic acid to form water-soluble thio-acetal sulfonic acids useful for mothproofing textiles.--Brit. 492,938.

1(2)-NAPHTHALENONE, 3,4-DIHYDRO-

The vapors of alpha-tetralon are used to destroy moths in clothes; for example, 1 kg. alpha-tetralon and 4 kgs. naphthalene are melted together and molded into cones. One kilogram of alpha-tetralon may be emulsified with 1 kg. of potash soap in 10 liters of warm water and used as a spray.-Ger. 357,063.

NAPHTHIANTHRENE

Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

2-NAPHTHOIC ACID, 4-CHLORO-3-HYDROXY-

Brit. 274,425; Can. 280,549; Fr. 635,973; Ger. 469,094; and U. S. 1,734,682.

1-NAPHTHOIC ACID, 2-HYDROXY-

Brit. 274,425.

1-NAPHTHOIC ACID, 2-HYDROXY-, SULFURIZED

Brit. 274,425; Can. 280,549; Fr. 635,973; Ger. 469,094; U. S. 1,734,682.

2-NAPHTHOIC ACID, 3-HYDROXY-, SULFURIZED

U. S. 1,734,682.

NAPHTHOL

Naphthol is mentioned as an example of an adhesive and filler to be used with aromatic thiocyanates as a mothproofing agent and aphicide.-
Brit. 325,910.

Naphthols may be condensed with aralkyl compounds and subsequently sulfonated to form mothproofing products.-Brit. 334,886.

NAPHTHOL, DINITRO-, SODIUM SALT

The sodium salt of dinitronaphthol is dissolved in water and an equimolecular quantity of tricresol (rendered soluble with soda lye) is added. When diluted, this stock solution is used for the preservation of cellulosic materials against mildew, termites, etc.-Fr. 677,340.

Cloth dyed with martius yellow is completely mothproof.-Clark and Craft (13).

The discovery by Meckbach of the mothproofing qualities of martius yellow (ammonium, sodium or calcium salt of dinitro-1-naphthol) is referred to.-Clark (12).

Tests in feeding clothes moth larvae with naphthol yellow (sodium salt of 2,4-dinitro-alpha-naphthol) are described.-Mullin (24).

NAPHTHOL, POLYBROMO-

Employed for the protection of cellulosic materials from rodents and bacteria.-Fr. 677,340.

1-NAPHTHOL

One kilogram of alpha-naphthol is dissolved in a slight excess of 10 percent caustic soda. This stock solution is diluted to a naphthol content of 1 percent for use in protecting cellulosic materials (particularly "solomite") from rodents, and bacteria.-Fr. 677,340.

Ineffective.-Jackson and Wassell (18).

The condensation product of triphenylphosphine oxide with alpha-naphthol is useful for mothproofing wool.-Brit. 326,137; Ger. 521,205.

1-NAPHTHOL, CONDENSATION PRODUCT OF, WITH 5-CHLORO-2-HYDROXY-alpha, alpha'-m-XYLENEDIOL

Ger. 542,067.

1-NAPHTHOL, 4-CHLORO-

Condensed with formaldehyde or other aldehydes to make mothproofing agents.-Brit. 316,900; Fr. 681,795.

1-NAPHTHOL, 4-CHLORO-, CONDENSATION PRODUCT OF, WITH 5-CHLORO-2-HYDROXY-alpha, alpha'-m-XYLENEDIOL

Ger. 542,068.

2-NAPHTHOL

beta-Naphthol is mixed with naphthalene or camphor and sulfur for fumigating clothes moths.-Ger. 411,345.

beta-Naphthol is employed for the protection of cellulosic materials from rodents, and bacteria.-Fr. 677,340.

The condensation product of triphenylphosphine oxide with 2-naphthol is useful for mothproofing wool.-Brit. 326,137; Ger. 521,205.

The sulfonated condensation product of beta-naphthol and 2,6-dichlorobenzyl omega-sulfonic acid is used for mothproofing.-Brit. 334,886. 2-Naphthol also may be condensed with trichlorobenzylalcohol, or a mixture of 2,3,4- and 2,4,5-trichlorobenzylchlorides or another ester or ether of trichlorobenzylalcohol.-Ger. 534,338.

The following mixture is used for impregnating wood to make an artificial cedar board or "moth wood"; 45 kg. dextro-camphor, 30 kg. beta-naphthol, 5 kg. naphthalene, 10 kg. paraffin, 8 kg. resin or resin soap, 2 kg. menthol, and 0.1 kg. oil-red BX. This is melted and used to impregnate boards, for example, beechwood, in the usual way.-Ger. 470,458.

Wood ("Mottenholz") is made repellent to clothes moths by impregnating it with a mixture of 35 percent turpentine, 20 percent varnish, 35 percent camphor, and 15 percent beta-naphthol (sic.).-Ger. 481,679.

2-NAPHTHOL, p-CHLOROBENZENESULFONIC ACID ESTER

Brit. 491,434.

2-NAPHTHOL, CONDENSATION PRODUCT OF, WITH DICHLORO-alpha-TOLUENESULFONIC ACID

U. S. 1,910,938.

2-NAPHTHOL, SULFONATED CONDENSATION PRODUCT OF, WITH alpha,X,X,X-TETRA-CHLOROTOLUENE

A woolen fabric is rendered permanently mothproof by applying thereto 2 percent of this compound.-U. S. 1,910,938.

2-NAPHTHOL, DIBROMO-

The condensation product of dibromo-2-naphthol with triphenylphosphine oxide, is used to mothproof wool.-Ger. 521,205.

2-NAPHTHOL, NITROSO-

Ineffective.-Jackson and Wassell (18).

2-NAPHTHOL, ar-TETRAHYDRO-

The condensation product of triphenylphosphine oxide with ar-tetrahydro-beta-naphthol, is useful for mothproofing wool.-Brit. 326,137; Ger. 521,205.

2-NAPHTHOL-6,8-DISULFONIC ACID, SODIUM SALT

Ineffective.-Jackson and Wassell (18).

NAPHTHOLS

Compositions for the protection of cellulosic materials against rodents, insects, bacteria, etc. are prepared by mixing a naphthol with an anticryptogamic substance.-Fr. 677,340.

NAPHTHOLS, HALOGENATED

These compounds, substituted at a carbon atom by a hexyl, octyl, decyl, dodecyl, tetradecyl, hexadecyl or octadecyl residue are used as mothproofing agents.-Brit. 474,600.

A process of condensing p-halogenated naphthols with aldehydes to form mothproofing compounds is described in Brit. 333,561.

1-NAPHTHOL-2-SULFONANILIDE, 4,4'-DICHLORO-

Brit. 324,962; Fr. 682,721; Ger. 506,988.

NAPHTHOLSULFONYL CHLORIDE

Used with or without a solvent for mothproofing.-Ger. 449,126.

1,2-NAPHTHOQUINONE

Ineffective.-Jackson and Wassell (18).

2,3-NAPHTHOTETRONIC ACID, alpha-CARBOXYLIC ACID ESTER

The alkyl ester group may vary from methyl to amyl.

Brit. 478,398; Fr. 817,182; Ger. 665,214; U. S. 2,127,879.

NAPHTHO[2,1]THIAZOLE, 2-AMINO-

Brit. 407,691.

NAPHTHYLAMINE, ACETYL-

Ger. 346,597.

2-NAPHTHYLAMINE

Ineffective.-Jackson and Wassell (18).

NAPHTHYLAMINE BLACK

One-hundred grams of wool are treated in the manner of a dyeing process while boiling with 6 percent of naphthylamine black, (color Index 1924 number 246), 10 percent of Glauber's salt, and 4 percent of selenic acid. The material thus treated is permanently protected against attack by moths. - Anthrenus, Attagenus and other textile pests.-U. S. 1,903,864.

1-NAPHTHYLAMINE HYDROFLUORIDE

Ineffective.-Jackson and Wassell (18).

1-NAPHTHYLAMINE-3,6,8-TRISULFONIC ACID

100 parts by weight of wool are treated with 3 parts by weight of 1-naphthylamine-3,6,8-trisulfonic acid, 3 parts sulfuric acid, and 10 parts calcined Glauber's salt.-Ger. 344,266.

NAPHTHYLHYDRAZINE HYDROFLUORIDE

Ineffective.-Jackson and Wassell (18).

NEWSPAPER

"Actual experiments have shown that ordinary newspaper without any printing is exactly as effective as printed newspaper and that the virtue depends upon the fact that garments free from infestation, wrapped tightly in newspaper, cannot be reached by moths or larvae, for as we have shown, larvae do not eat paper, and consequently can not reach the goods".-Sachs (35).

The printers' ink of newspapers is valueless as a mothproofing agent.-White, Fulton and Cranor (42).

NICOTINE

Tobacco extracts and nicotine solutions are worthless for use against clothes moths.-Mullin (24).

Nicotine sulfate solution containing 1.6 percent of nicotine failed to kill an appreciable number of larvae.-Scott, Abbott and Dudley (38).

The following drenching solution for hides also renders them mothproof: cooking salt 11 percent, sulfuric acid 2 to 3 percent, nicotine 0.05 to 0.005 percent, oxalic acid 1 to 0.8 percent, water 86 to 85.2 percent.-Ger. 595,849.

A solution in water of 0.05 to 1.0 percent crude nicotine is used to impregnate pelts.-Ger. 612,172.

Nicotine may be added to a solution of alkyl sulfofluorides.-U. S. 2,114,577.

An alcoholic solution of nicotine combined with benztetronic acid-alpha-carboxylic acid is used for mothproofing wool.-U. S. 2,127,879.

NICOTINE FLUOSILICATE

Brit. 391,141; U. S. 2,075,359.

NICOTINIUM COMPOUND, BIS(3,4-DICHLOROBENZYL)-3-CHLORIDE

Brit. 483,368.

NITRIC ACID

100 parts of wool are placed in a cold bath consisting of 2 parts ammonium molybdate and 10 parts nitric acid, and while the goods are continually agitated, a dilute solution of 1 part sodium phosphate is gradually added. The goods are allowed to remain in the bath for a few hours and are then rinsed and dried.-Brit. 173,536; Ger. 347,720.

Nitric acid, in combination with ammonium molybdate and sodium phosphate with water is ineffective as a mothproofing agent.-Jackson and Wassell (18).

NITROGEN COMPOUNDS, POLYMERIC-AMINO-

A composition of matter suitable for protecting materials against parasitic attack comprises a dispersion of a parasiticide in a solution of a salt of a polymeric amine-nitrogen-containing body substantially insoluble in water and in 5 percent aqueous ammonia but soluble in at least the stoichiometrical amount of 2 percent aqueous acetic acid and capable of forming a coherent film therefrom. Deacetylated chitin acetate is an example.-U. S. 2,098,942.

NITROGEN-PHOSPHORUS COMPOUNDS

A process for rendering textiles moth-proof employs an organic compound containing nitrogen and pentavalent phosphorus, wherein at least 1 nitrogen atom is directly bound to a phosphorus atom.-Brit. 500,386.

NUMOQUIN HYDROCHLORIDE

Ineffective.-Jackson and Wassell (18).

OCTADECANE, 1-CHLORO-,

Condensed with methylethyleneimine. - Fr. 810,395.

OCTADECANEDIOL

OCTADECENEDIOL

Products made by condensing several mols of aromatic hydroxyl compounds or halogen-hydroxyl-compounds and octa-decanediol or octa-decenediol are used for mothproofing wool. - Brit. 495,761; Fr. 48,395; 802,508.

OLEIC ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium, and thallium) of oleic acid are used for mothproofing. For example: woolen fabric is impregnated with a 1/2 percent solution of thorium oleate in white spirit. - Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

Seven parts of neutralized anylnaphthalenesulfonic acid and 3 parts of oleic acid in 1-1/2 percent benzene solution are used for mothproofing fibrous materials. - Brit. 313,043.

Quinoidine is combined with oleic acid for mothproofing purposes. - U. S. 1,694,219.

Oleic acid alone is more effective in mothproofing fabric than in combination with quinidine or other alkaloids. - Minaeff and Wright (23).

A mothproofing agent consists of water-insoluble vegetable acid compounds produced by the reaction of crystallized quassin and quinine in the presence of oleic acid and hydrogen peroxide, dissolved in benzine, petrol, or the like to which is added a small quantity of a stable, non-volatile heavy oil, such as cade oil, paraffin, or the like. - Brit. 399,938.

The dixylyl guanidine salt of oleic acid is used for mothproofing wool. - U. S. 1,915,922.

Neutral alkali salts of oleic acid are an example of a neutral washing agent used in admixture with mothproofing agents, such as salts of quaternary phosphonium bases. - U. S. 2,130,435.

OLEIC ACID, SULFONATED

An ingredient of a mothproofing solution. - U. S. 1,634,793.

OLEIC ACID, SULFURIZED

An acid washing agent used with fluorides, phosphonium compounds, etc. - U. S. 2,082,188.

OLEIC ACID, SULFURIZED, ALKYL ESTER

An example of an acid washing agent used with phosphonium compounds and other mothproofing agents. - U. S. 2,130,435; 2,184,951.

OLEIC ACID, SELENO-

Fibers are mothproofed by impregnating them with 1.4 percent of their weight of seleno-oleic acid. - Aust. 123,423; Ger. 524,590.

OLEIN

An ingredient of a mothproofing solution. - Brit. 483,368.

OLEOPRESIN

A constituent of an adhesive mothproofing composition. -
Brit. 463,725.

OLEYL ALCOFOL, CONDENSATION PRODUCT OF, WITH p-CHLOROPHENOL

Fr. 802,508.

OLIVE OIL, SULFONATED

An ingredient of a mothproofing solution. - U. S. 1,634,793.

ORRIS ROOT

The rootstock of the Florentine Iris, Iris Florentina.

Dusting orris root over garments does not protect them against clothes moths. - Mullin (24).

OXALACETIC ESTER

Condensed with thiourea and benzaldehyde or o-chlorobenzaldehyde to form products useful for mothproofing wool. - Ger. 547,057.

OXALIC ACID

An ingredient of mothproofing solutions. - Brit. 235,915;
U. S. 1,634,791; 1,634,794.

The oxalates of alkaloids (e.g. quinine) were absolutely useless as mothproofing agents. - Minaeff and Wright (23).

Oxalic acid may be added to drenching solutions for hides which also contain mothproofing materials. An example of a suitable solution is: Cooking salt 11 percent, sulfuric acid 2-3 percent, nicotine 0.05-0.005 percent, oxalic acid 1-0.8 percent, water 86-85.2 percent. - Ger. 595,849.

OXINDOLE, 3,3-BIS(p-HYDROXYPHENYL)-, BIS(p-CHLOROBENZENESULFONIC ACID ESTER)

Brit. 491,434; U. S. 2,148,928.

PALMITAMIDE, N-(5-CHLORO-2-HYDROXYBENZYL)-

Brit. 497,214; Fr. 48,395; 1st addition to 802,508.

PALMITIC ACID, NEUTRAL ALKALI SALTS

An example of a neutral washing agent used in admixture with mothproofing agents, such as salts of quaternary phosphonium bases. - U. S. 2,130,435.

PARAFFIN

Used in making an artificial cedar board. - Ger. 470,458.

Bagging for grain is rendered insect-, rodent- and waterproof by saturating it with a salt solution, drying, immersing in a bath of heated paraffin and again drying. - U. S. 1,019,909.

An ingredient of a mothproofing solution. - U. S. 1,977,412.

A solid mixture of 65 percent paraffin and 35 percent cyclohexene oxide is used to fumigate clothes moth larvae. - U. S. 2,101,587.

Used to coat a block of wood impregnated with cedar oil. - U. S. 1,479,704.

PARAFFIN OIL

An ingredient of a mothproofing composition. - Brit. 399,938.

PARAFORMALDEHYDE

A mixture of $\frac{2}{3}$ naphthalene and $\frac{1}{3}$ paraformaldehyde is vaporized for combating moths. - Ger. 363,852.

Paraformaldehyde, 20 grams, is made into a powder with 80 grams of dichlorobenzene and 1 gram of hydrosulfite for use as a mothproofing material. - Jap. 78,953.

May be used in conjunction with methyl formate-magnesium chloride and other addition compounds. - Brit. 426,398.

PARALDEHYDE

Ineffective. - Jackson and Wassell (18).

PATCHOULI OIL

A mixture of 3 ounces of oil of patchouli and 16 ounces of alcohol is particularly adapted to exterminate moths. - U. S. 1,605,202.

PEANUT MEAL

A constituent of an adhesive mothproofing composition. - Brit. 463,725.

2-PENTANONE, 4-HYDROXY-4-METHYL-

A solvent for copper salts of higher fatty acids, e.g., copper oleate. - Brit. 367,913.

PEPPER, BLACK

Black pepper is the powdered dried berries of Piper nigrum.

Pepper is mentioned as a well-known clothes-moth repellent in Brit. 173,536; Ger. 344,266; Swed. 59,841; and U. S. 1,562,510.

"Powdered black pepper strewed under the edge of carpets is said to repel moths." - quoted by Packard (27).

Black pepper dusted over garments is ineffective in protecting them against clothes moths. - Mullin (24); Back (5).

An alcoholic extract of black pepper proved ineffective for mothproofing. - Jackson and Wassell (18).

PEPPER, RED

Derived from species of Capsicum.

Cayenne (red) pepper is worthless for clothes moth control. - Back (5): White, Fulton and Granor (42); Scott, Abbott and Dudley (38).

PERCHLORIC ACID

Salts of quaternary phosphonium bases with perchloric acid are used for mothproofing. - Ger. 506,987.

PETROLATUM

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a rare earth salt. - U. S. 1,799,047.

PETROLEUM

"Various liquid petroleum derivatives" as moth repellents are listed by Sachs (33).

Petroleum distillates, such as gasoline and naphtha, destroy clothes moths. - Jackson and Wassell (18).

A solvent for alpha-tetralon. - Ger. 357,063.

PETROLEUM ETHER

A solvent for: Cinchona alkaloids. - U. S. 1,615,843.

alpha-Tetralon. - Ger. 357,063.

PETROLEUM HYDROCARBONS, UNSATURATED

Solvents for alkyl sulfofluorides. - U. S. 2,114,577.

PETROLEUM LUBRICATING OIL

A mothproofing material is prepared by saponifying fatty acids and vegetable oils with soda, potash, and ammonia and adding either a maceration or a decoction of the leaves or of the powder of pyrethrum in a petroleum lubricating oil. - Fr. 699,410.

PHELLOGENIC ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium, and thallium) of jpanic acid are claimed for mothproofing. - Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

PHENACETIN

Ger. 346,597.

Ineffective. - Jackson and Wassell (18).

p-PHENETIDINE

Ger. 346,597.

PHENETIDINE HYDROFLUORIDE

Ineffective. - Jackson and Wassell (18).

PHENETOLE, 4-FLUORO-

U. S. 1,955,891.

PHENOL

A weak solution of carbolic acid kills clothes moths. - Packard (27).

Commercial crude carbolic acid, used at the rate of 1 part of the acid to 10 parts of water, proved effective in protecting flannel from moth infestation. - Scott, Abbott and Dudley (38).

Cardboard is impregnated with a mixture of dinitronaphthalene and phenol, and placed among garments to prevent the attack of insects. - U. S. 1,216,356.

Material is mothproofed with a mixture of 93 percent water, 3 percent phenol, and 4 percent tincture of quassia. - U. S. 1,591,902.

Textiles are mothproofed with steam impregnated with about 5 percent benzaldehyde and from 1/2 to 1 percent phenol. - U. S. 1,594,632.

Carbolic acid is used to impregnate blocks of porous gypsum for use against clothes moths. - Ger. 409,510.

Phenol is used as a germicide and moth repellent in a shredded leather or ground asbestos composition which is combed through furs. A hide softening agent such as pine oil and a glazing agent such as casein may be added. - U. S. 2,126,261.

A diluted solution of phenol and zincate (made by dissolving zinc sulfate in an excess of alkali) is used for the preservation of cellulosic materials from rodents, insects, etc. - Fr. 677,340.

Mothproofing agents are made by condensing phenol with:

Aralkyl compounds - Brit. 334,886.

o-Benzaldehydesulfonic acid - Fr. 681,795.

Chloral. - Hung. 96,776.

Cyclohexanone - Brit. 326,451; 310,825.

Formaldehyde and urea - Brit. 419,179; Fr. 766,945.

Methyl cyclohexanones - Brit. 326,451; Fr. 681,795; Ger. 530,331.

Triarylphosphine oxide - Dutch 25,565.

Triphenyl and tritolyl phosphine oxide - Brit. 326,137; Ger. 521,205.

PHENOL, p-ALKYL-

Condensed with an aromatic aldehyde to form a mothproofing compound. - Brit. 330,893.

PHENOL, p-tert-ALKYL-

A mothproofing composition contains a para-tertiary alkyl phenolic salt of dixylyl guanidine in a volatile solvent. - Can. 375,599.

PHENOL, AMYL-

Condensed with N-benzyl-isatinsulfonic acid to form a mothproofing agent. - Fr. 43,866; 1st addition to 759,662; or with 5-isatinsulfonic acid. - Fr. 759,662; Ger. 641,625.

PHENOL, p-AMYL-

Condensed with 5-isatinsulfonic acid. - Brit. 424,967; U. S. 2,070,351; or with N-benzyl-isatinsulfonic acid to make a mothproofing compound. - Brit. 424,972; Swiss 169,550; U. S. 2,070,350.

PHENOL, tert-AMYL-

Condensed with 5-isatinsulfonic acid to make a mothproofing compound. - Swiss 167,697.

PHENOL, p-tert-AMYL-

Used to make the para-tertiary amyl phenolic salt of dixylyl guanidine. - U. S. 2,145,214; or of a diaryl guanidine. - Can. 375,599, which are mothproofing agents.

PHENOL, AMYL-2-CHLORO-

Condensed with 5-isatinsulfonic acid to form a mothproofing compound. - Brit. 424,967; Fr. 43,866; 1st addition to 759,662.

PHENOL, p-BENZYL-

The condensation product of 4-hydroxy-diphenyl with triphenyl-phosphine oxide, is useful for mothproofing wool. - Brit. 326,137; Ger. 521,205.

PHENOL, 6-BENZYL-2,4-DIBROMO-

Brit. 338,126.

The sulfonated product is also used for mothproofing wool. - Brit. 337,808.

PHENOL, p-BROMO-

Condensation products of p-bromophenol with formaldehyde, p-chlorobenzaldehyde, o-sulfobenzaldehyde, or other aldehydes are used to protect textiles against Anthrenus vorax, Dermestes and other pests. - Aust. 118,640; Brit. 316,900; 338,126; Fr. 651,646; Ger. 503,256.

PHENOL, p-BUTYL-

The condensation product of triphenylphosphine oxide with 4-n-butylphenol is useful for mothproofing wool. - Brit. 326,137.

PHENOL, CAPROYL-

Fr. 802,508.

PHENOL, CAPROYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395; 1st addition to 802,508.

PHENOL, 2-CAPROYL-4-CHLORO-

Brit. 474,600; Fr. 802,508.

PHENOL, 2-CAPROYL-4-CHLORO-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, CAPRYL-

Fr. 802,508.

PHENOL, CAPRYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, CAPRYLYL-

Fr. 802,508.

PHENOL, CAPRYLYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 2-CAPRYLYL-4-CHLORO-

Brit. 474,600; Fr. 802,508.

PHENOL, 2-CAPRYLYL-4-CHLORO-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, CHLORO-, SULFONATED CONDENSATION PRODUCT OF, WITH UREA AND
FORMALDEHYDE

Brit. 419,179; U. S. 1,906,890.

PHENOL, m-CHLORO-

Condensed with an aldehyde to form mothproofing products. -

Brit. 330,894; 338,126; Fr. 681,795; Ger. 506,989.

PHENOL, m-CHLORO-, CONDENSATION PRODUCT OF, WITH SODIUM 2-FORMYLBENZENE-
SULFONATE

U. S. 1,906,890.

PHENOL, o-CHLORO-

o-Chlorophenol has been condensed with numerous compounds to make mothproofing products, for example with cyclohexanone, -Brit. 326,451; Fr. 681,795; Ger. 530,331; with triphenylphosphine oxide, Brit. 326,137; Ger. 521,205; with 5,7-dibromoisatin, Brit. 424,972; with 5,8-dibromoisatin, Fr. 43,866; 1st addition to 759,662; with N-(2'-chlorobenzyl)-5-isatinsulfonic acid, Swiss 203,302.

PHENOL, p-CHLORO-,

Mothproofing agents are made by condensing p-chlorophenol with:

Aldehydes. - Hung. 96,776.

Benzaldehyde and its derivatives. - Brit. 316,900; 335,547;

Fr. 651,646; Ger. 503,256.

Benzaldehyde and sulfonating. - Fr. 39,337; Ger. 541,629.

Benzaldehydesulfonic acid chloride. - Fr. 39,334.

Benzyl alcohol, or benzyl chloride or benzyl acetate. -

Ger. 542,069.

Brominated 2-formylbenzenesulfonic acid. - Ger. 544,293.

Chlorinated 2-formylbenzenesulfonic acids. - Ger. 540,208.

2,6-Dichlorobenzyl chloride. - Brit. 337,832.

3,5-Dichloro-2-hydroxybenzyl alcohol. - Fr. 39,337.

Formaldehyde. - Aust. 118,640; Brit. 337,808; 338,126;

Ger. 503,256.

Formaldehyde and sulfonating. - Fr. 39,337; Ger. 541,629.

Hydroxynaphthaldehyde. - Hung. 96,776.

5-Isatinsulfonic acid and several of its derivatives. -

Brit. 424,967; 424,972; Fr. 759,662; 43,886, 1st addition to 759,662; Swiss 165,020; 203,301; 203,303, and 203,304; U. S. 2,070,352; 2,070,353.

Miscellaneous compounds. - Brit. 333,561; Ger. 513,387; 513,388.

Oleyl alcohol. - Fr. 802,508.

Tetrachlorobenzyl chloride. - Ger. 534,338.

alpha,2,4,5-Tetrachlorotoluene and brominating. - Ger. 544,293.

Triphenylphosphine oxide. - Brit. 326,137; Ger. 521,205.

PHENOL, 4-CHLORO-2,6-BIS(o-CHLOROBENZYL)-

This compound, formed by condensing o-chlorobenzyl chloride and p-chlorophenol in the presence of zinc chloride, is used for mothproofing wool. - Ger. 542,069; U. S. 1,880,566.

PHENOL, 4-CHLORO-2,6-BIS(5-CHLORO-2-HYDROXYBENZYL)-

Five parts of 2,6-dimethylol-4-chlorophenol and 3.52 parts of p-chlorophenol are condensed. - Ger. 542,067.

PHENOL, 4-CHLORO-2,6-BIS(3,5-DICHLORO-4-HYDROXYBENZYL)-

2,6-Dimethylol-4-chlorophenol and 2,4-dichlorophenol are condensed. - Ger. 542,067.

PHENOL, 4-CHLORO-2,6-BIS(HYDROXYMETHYL)-

The condensation product of this with 2 mols of p-chlorophenol is used for mothproofing wool. - Ger. 513,388.

PHENOL, 4-CHLORO-2-(o-CHLOROBENZYL)-

This product, formed by condensing o-chlorobenzyl chloride and p-chlorophenol in the presence of zinc chloride, is used for mothproofing wool and to combat the growth of bacteria and molds. - Ger. 513,388; 542,069; U. S. 1,880,566.

PHENOL, 4-CHLORO-2-sec-DECYL-

Brit. 474,600.

PHENOL, CHLORODIMETHYL-

A mothproofing composition comprises about 3 to 5 percent each of Chlorax (a commercial mixture of isomeric chlorohydroxydimethylbenzenes) and musk xylol (trinitrodimethylisobutylbenzene) intimately admixed with about 94 to 90 percent of an inert filler. - Brit. 389,860.

PHENOL, m-[2-(2-CHLOROETHOXY)ETHOXY]-

Also the ortho and para derivatives. - U. S. 2,098,204.

PHENOL, 4-CHLORO-2-(HEXAHYDROBENZOYL)-

Brit. 495,639; Fr. 48,395, 1st addition to 802,508.

PHENOL, 4-CHLORO-2-sec-HEXYL-

Brit. 474,600.

PHENOL, 4-CHLORO-2-(ISOAMYL-CYCLOHEXYL)-

For example, 1.5 parts by weight of 4-chloro-2-(isoamyl-cyclohexyl)-phenol are dissolved in 100 parts of benzine. Into this solution a woollen cloth is immersed; as soon as it is well penetrated it is taken out and centrifuged. After this treatment the cloth is protected against damage by moths. - Brit. 495,639; Fr. 48,395, 1st addition to 802,508.

PHENOL, 4-CHLORO-ISOBUTYL-

The condensation product of isobutyl-p-chlorophenol with triphenylphosphine oxide is used to mothproof wool. - Ger. 521,205.

PHENOL, 4-CHLORO-2-ISOBUTYL-

The condensation product of triphenylphosphine oxide with 2-isobutyl-4-chlorophenol is useful for mothproofing wool. - Brit. 326,137; Ger. 521,205.

PHENOL, 4-CHLORO-2-ISODECYL-

PHENOL, 4-CHLORO-2-ISOHEXYL-

Fr. 802,508; also esters and ethers of this. - Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 4-CHLORO-2-LAUROYL-

PHENOL, 4-CHLORO-2-MYRISTOYL-

Brit. 474,600; Fr. 802,508; also esters and ethers of this. - Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 4-CHLOROCOLEYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 4-CHLORO-2-PALMITOYL-

Brit. 474,600; Fr. 802,508; also others and esters of this. - Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 2-CHLORO-4-PHENYL-

U. S. 1,977,412.

PHENOL, 4-CHLORO-2-STEAROYL-

Brit. 474,600; Fr. 802,508; and ethers and esters of. - Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 4-CYCLOHEXYL-

Brit. 495,639; Fr. 48,395, 1st addition to 802,508.

PHENOL, DECYL-

Fr. 802,508; and ethers and esters of, Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 2,5-DIBROMO-,

Mothproofing agents are made by condensing 2,5-dibromophenol with:

Formaldehyde. - Brit. 330,894; Ger. 536,551.

Sodium 2-formylbenzenesulfonate. - Ger. 536,551;

U. S. 1,906,890.

PHENOL, 2,4-DICHLORO-

Mothproofing agents are made by condensing 2,4-dichlorophenol with:

Benzaldehyde or its chloro- or sulfonic acid derivatives -

Brit. 333,561; 334,886; 335,547; 337,808; Ger. 513,387;

534,338; Swiss 148,330.

Chlorinated 2-formylbenzenesulfonic acid. - Fr. 39,334.

2,6-Dichlorobenzal chloride. - Brit. 337,832.

Formaldehyde. - Aust. 118,640; Brit. 316,900; Fr. 651,646;

Ger. 503,256; Swiss 135,166.

4-Formylbenzenesulfonic acid. - Swiss 148,330.

5-Isatinsulfonic acid and derivatives. - Brit. 424,967; Fr.

759,662; Swiss 165,031; U. S. 2,070,352; 2,070,353.

Triphenylphosphine oxide. - Brit. 326,137; Ger. 521,205.

PHENOL, 2,5-DICHLORO-

The condensation product of 2,5-dichlorophenol and sodium benzaldehyde-o-sulfonate protects animal fibers against pests. -
Brit. 330,894; Ger. 536,551; U. S. 1,906,890.

PHENOL, 2,6-DICHLORO-

Mothproofing products are made by condensing 2,6-dichlorophenol with:

Benzaldehydesulfonic acid. - Brit. 335,547.

Formaldehyde. - Fr. 681,795.

Triphenylphosphine oxide. - Brit. 326,137.

PHENOL, 2,4-DICHLORO-6-sec-DODECYL-

Brit. 474,600.

PHENOL, 2,4-DICHLORO-6-ISODECYL-

Used in benzine solution. - Fr. 802,508.

PHENOL, 2,4-DICHLORO-6-ISOHEXYL-

Furs are treated with a mixture of 7 percent 4,6-dichloro-2-iso-hexylphenol and 93 percent talc. - Fr. 802,508.

PHENOL 2,4-DICHLORO-6-ISOTETRADECYL-

Fr. 802,508.

PHENOL, 4,6-DICHLORO-2-(omega-METHOXY-sec-DECYL)-

Brit. 474,600.

PHENOL, 4,6-DICHLORO-2-(omega-METHOXYISODECYL)-

Fr. 802,508.

PHENOL, 2,6-DICHLOROPHENYL-2,2'-METHYLENEBIS(4,6-DICHLORO-

Fr. 39,334; Ger. 540,208.

PHENOL, 2,4-DICHLORO-6-sec-TETRADECYL-

Brit. 474,600.

PHENOL, m-DIETHYLAMINO-

The condensation product of triphenylphosphine oxide with m-hydroxydiethylaniline is useful for mothproofing wool. - Brit. 326,137; Ger. 521,205.

PHENOL, DIISOBUTYL-

PHENOL, 2,2'-(1,8-DIMETHYLOCTAMETHYLENE)BIS(p-CHLORO-

PHENOL, 1,2-DIMETHYLPROPYL-

Fr. 802,508, and ethers and esters of, Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, o-ETHOXY-

The condensation product of triphenylphosphine oxide with pyrocatechin monoethyl ether is useful for mothproofing wool. - Brit. 326,137; Ger. 521,205.

PHENOL, FLUORO-

U. S. 1,955,891.

PHENOL, p-FLUORO-

Condensed with formaldehyde to form a product useful for mothproofing wool. - Brit. 335,547; Ger. 535,151.

PHENOL, HEXADECYL-

Fr. 802,508; and ethers and esters of, Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, ISOBUTYL-

The condensation product of isobutylphenol with triphenylphosphine oxide is used to mothproof wool. - Ger. 521,205.

PHENOL, ISODECYL-

PHENOL, ISOOCXYL-

PHENOL, ISOTETRADECYL-

PHENOL, LAUROYL-

Fr. 802,508; and ethers and esters of, Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 4-METHYLCYCLOHEXYL-

Brit. 495,639; Fr. 48,395, 1st addition to 802,508.

PHENOL, METHYLENEBIS(BROMOCHLORO-

Ger. 544,293.

PHENOL, 2,2'-METHYLENEBIS(4-CHLORO-6-CYCLOHEXYL-

Brit. 495,639; Fr. 48,395, 1st addition to 802,508.

PHENOL, 2,2'-METHYLENEBIS(4,6-DICHLORO-

Fr. 39,334; Ger. 544,293; Hung. 96,776.

PHENOL, MYRISTOYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, p-NITRO-

The condensation product of triphenylphosphine oxide with p-nitrophenol is useful for mothproofing wool. - Brit. 326,137; Ger. 521,205.

PHENOL, sec-OCTYLCYCLOHEXYL-

Brit. 495,639; Fr. 48,395, 1st addition to 802,508.

PHENOL, OCTADECYL-

PHENOL, OCTYL-

Fr. 802,508; and ethers and esters of, Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, PENTACHLORO-

The fabric is first treated with a solution of the soda or potash salt of pentachlorophenol and is then treated with a solution of a metallic salt, such as lead, zinc, calcium, barium, or aluminum, which yields a precipitate within the pores of the fabric. - U. S. 1,085,783.

PHENOL, PERCHLORO-

U. S. 1,085,783.

PHENOL, PHENYL-

Brit. 333,584; Ger. 520,184.

PHENOL, TETRACHLORO-

U. S. 1,085,783.

PHENOL, TETRADECYL-

Fr. 802,508; and others and esters of, Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

PHENOL, 2,4,6-TRIBROMO-,

Condensed with 4-formylbenzenesulfonic acid to form a mothproofing compound. - Ger. 548,822.

PHENOL, 2,4,5-TRICHLORO-

Condensed with o-sulfo-benzaldehyde to form a mothproofing compound. - Brit. 333,561; Ger. 513,387.

PHENOL, 2,4,6-TRICHLORO-,

The condensation product of triphenylphosphine oxide with 2,4,6-trichlorophenol is useful for mothproofing wool. - Brit. 326,137; Ger. 521,205.

Condensed with 2-formyl- or 4-formylbenzenesulfonic acid to form a mothproofing compound. - Ger. 548,822.

1-PHENOL-2,6-DISULFONAMIDE, N-BENZYL-4-CHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988.

1-PHENOL-2,6-DISULFONAMIDE, 4-CHLORO-N,N'-DIBENZYL-

U. S. 1,962,276.

1-PHENOL-2,6-DISULFONANILIDE, 4-CHLORO-3',3"-DIACETAMIDO-

Brit. 324,962; U. S. 1,962,276.

1-PHENOL-2,6-DISULFONANILIDE, 5',5"-DICHLORO-2',2"-DIHYDROXY-

U. S. 1,962,276.

1-PHENOL-2,6-DISULFONANILIDE, 2',2'',4,5',5"-PENTACHLORO-

Animal fibers are mothproofed by the application of the 2,5-dichloroanilide of 4-chlorophenol-2,6-disulfonic acid, together with a lubricant used in one of the manufacturing steps. - Brit. 453,053.

1-PHENOL-2,6-DISULFONANILIDE, 4,4',4"-TRICHLORO-

100 kg. of material are treated in 1000 kg. of water with 3 percent of the sodium salt of this compound to which 1 to 5 percent of acetic or sulfuric acid has been added. The material is then rinsed and dried. - Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

1-PHENOL-2,4-DISULFONANILIDE, 4',4'',5-TRICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

1-PHENOL-2,6-DISULFONANILIDE, 4,5',5"-TRICHLORO-2,2"-DIHYDROXY-

Brit. 324,962; Fr. 686,721; Ger. 506,988.

PHENOL ESTERS

Brit. 495,761; Fr. 48,395, 1st addition to 802,508.

Phenol esters may be used in place of phenol in combination with dinitronaphthalene for impregnating cardboard to be placed among garments to prevent the attack of insects. - U. S. 1,216,356.

PHENOL ETHERS

Brit. 422,923; U. S. 2,053,610.

PHENOLPHTHALEIN

Wool treated with phenolphthalein shows considerable resistance to larval attack. - Minaeff (22).

PHENOLS

Compositions for the protection of cellulosic materials against rodents, insects, bacteria, etc. are prepared by mixing a phenol with an anticryptogamic substance. - Fr. 677,340.

Wool is mothproofed with halogenated or alkylated phenols. - Brit. 474,600; 495,639; 497,214; Fr. 48,395, 1st addition to 802,508.

PHENOLS, CONDENSATION PRODUCTS OF, WITH AROMATIC KETONES

Brit. 326,451; Ger. 530,331.

PHENOLS, DIARYL GUANIDINE SALTS

A mothproofing composition contains a hydroxy alkyl aryl salt of a diaryl guanidine. - Can. 375,599.

PHENOLS, HALOGENATED

These compounds, substituted at a carbon atom by a hexyl, octyl, decyl, dodecyl, tetradecyl, hexadecyl or octadecyl residue are used as mothproofing agents. - Brit. 474,600.

Wool, feathers, hair, etc. are protected against moths by washing with soap with which a substituted halogenphenol has been incorporated. - Ger. 581,990.

PHENOLS, p-HALOSULFONATED

Condensed with aldehydes to form mothproofing compounds. -

Brit. 316,900; 333,561; 337,832.

PHENOLS, ALKYL-

Fr. 802,508.

PHENOLS, CHLORO-

Chlorophenols may be condensed with aralkyl compounds and subsequently sulfonated to form mothproofing products. For example, p-chlorophenol is condensed with tetrachlorobenzyl chloride or 2,4-dichlorophenol is condensed with 2,6-dichlorobenzyl chloride and then sulfonated. - Brit. 334,886.

PHENOLS, HALO-,

Mothproofing compounds are made by condensing halophenols with octadecanediol and octadecenediol. - Brit. 495,761.

PHENOLS, PHENYL-, REACTION PRODUCTS OF, WITH BUTYL ALCOHOL, SULFONATED.

U. S. 2,010,443.

1-PHENOL-2-SULFONANILIDE, 4-CHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988.

1-PHENOL-2-SULFONANILIDE, 5-CHLORO-

U. S. 1,962,276.

1-PHENOL-2-SULFONANILIDE, 4,4'-DICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988.

1-PHENOL-2-SULFONANILIDE, 4,5-DICHLORO-

U. S. 1,962,276.

1-PHENOL-2-SULFONANILIDE, 4,6-DICHLORO-

Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

1-PHENOL-4-SULFONANILIDE, 2,4'-DICHLORO-

1-PHENOL-4-SULFONANILIDE, 2,4',6-TRICHLORO-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

PHENOLSULFONEPHTHALEIN

Fabrics treated with phenol red were badly damaged by clothes moth larvae. - Minaeff (22).

PHENOLSULFONIC ACID

Ger. 344,266.

Phenolsulfonic acids are condensed with aralkyl compounds to form mothproofing products. - Brit. 334,886.

PHENOLSULFONIC ACID, 4,6-DICHLORO-2-sec-DECYL-

Brit. 474,600.

PHENOLSULFONIC ACID, 2,4-DICHLORO-6-ISODECYL-

PHENOLSULFONIC ACID, 2,4-DICHLORO-6-ISOOCTYL-

Fr. 802,508.

1-PHENOL-2-SULFONIC ACID, 4-CHLORO-

Condensed with tetrachlorobenzyl chloride to form a mothproofing compound. - Brit. 334,886.

1-PHENOL-4-SULFONIC ACID

Fr. 518,821.

1-PHENOL-4-SULFONIC ACID HYDROFLUORIDE

Ger. 500,333.

PHENOXATHIIN

PHENOXATHIIN, AMYL-

PHENOXATHIIN, CHLORO-

PHENOXATHIIN, DICHLORO-

Brit. 502,320; Swiss 203,306.

PHENYLARSINIC ACID, SODIUM SALT

A 2 percent aqueous solution of the sodium salt of phenylarsinic acid is sprayed on fur and dried. - Brit. 303,092.

PHENYL ETHER

This compound and derivatives of it are used for mothproofing. For example a mothproofing solution is made by dissolving 5 parts of dichlorodiphenylether in 995 parts of acetone. - Swiss 199,985.

PHENYL SALICYLATE

Animal fibers are treated for from ten to twenty minutes in a 1-1/2 percent naphtha solution of a mixture of three parts of brucine anilide and five parts of phenyl salicylate. After this treatment the fibrous material can be stored for an unlimited period in a damp place without being attacked by mildew or the larvae of moths. - U. S. 2,015,533.

PHENYL SULFIDE

Brit. 502,320; Swiss 199,985; 203,306.

PHENYL SULFIDE, 4-CHLORO-

Brit. 502,320; Swiss 203,306.

PHOSPHATIDES

Used to emulsify fluorocoumarin in water. - Brit. 421,885.

PHOSPHINE, TRIPHENYL-

Wool lubricated with peanut oil containing 3 percent triphenylphosphine in solution is avoided by noxious insects. Mildew is also prevented and the oil cannot become rancid. - Brit. 453,053.

PHOSPHINE, TRIPHENYL-----DIHYDROXIDE

Material is mothproofed with a 2 percent solution of triphenylphosphine dihydroxide in a mixture of alcohol and water. - Brit.

303,092; U. S. 1,766,819.

PHOSPHINE, TRI-p-TOLYL-

Brit. 303,092; Ger. 485,646.

PHOSPHINE G N

Ineffective. - Jackson and Wassell (18).

PHOSPHINE OXIDE, TRIALKYL-

Less effective than organic compounds containing both nitrogen and pentavalent phosphorus as a mothproofing agent. - Brit. 500,386.

PHOSPHINE OXIDE, TRIARYL-

Condensed with compounds containing phenolic hydroxyl groups for combating microorganisms and pests, such as moth larvae. -

Dutch 25,565; Ger. 521,205.

PHOSPHINE OXIDE, TRIPHENYL-

Brit. 303,092.

Condensed with 4-benzylphenol to make a mothproofing product. - Brit. 326,137; Ger. 521,205.

PHOSPHINE OXIDE, TRIPHENYL-, ADDITION PRODUCT

Animal fibers are mothproofed by the application of a water soluble protective agent, e.g., triphenylphosphine oxide-1-methyl-5-propyl-2-chloro-5-oxybenzene addition product, together with a lubricant used in one of the manufacturing steps. - Brit. 453,053.

PHOSPHINE OXIDE, TRI-o-TOLYL-

Condensed with a phenol to make a mothproofing product. - Brit. 326,137.

PHOSPHINE OXIDE, TRI-p-TOLYL-

U. S. 1,766,819.

PHOSPHINE R N

Ineffective. - Jackson and Wassell (18).

PHOSPHINE SULFIDE, TRIPIPERIDYL-

PHOSPHINIC ACID AMIDE, DI-m-TOLOXYTHIO-

PHOSPHINIC ACID BIS(3,4-DICHLORCANILIDE), p-CHLOROPHENOXY-

PHOSPHINIC ACID BIS(DIMETHYLAMIDE), p-CHLOROPHENOXYTHIO-

PHOSPHINIC ACID BIS(DIMETHYLAMIDE), p-TOLYLTHIO-

PHOSPHINIC ACID DIAMIDE, p-CHLOROPHENOXYTHIO-

PHOSPHINIC ACID DIAMIDE, THIOPHENYL-

PHOSPHINIC ACID DIAMIDE, p-TOLOXY-

Brit. 500,386.

PHOSPHINIC ACID DIAMIDE, p-TOLOXYTHIO-

Twenty parts of mono-para-cresoxy-thiophosphinic acid diamide are dissolved in 980 parts of alcohol. Furs, feathers or wool are immersed in the solution and then centrifuged and dried. The goods thus treated are immune from damage by moths. Even more dilute solutions suffice to impart a satisfactory protection. -
Brit. 500,386.

PHOSPHINIC ACID N-DIETHYLETHYLENE DIAMIDE, DICHLOROPHENOXYTHIO-

Brit. 500,386.

PHOSPHOMOLYBDIC ACID

100 parts by weight of wool are treated for 1 hour with 5 parts by weight of sodium phosphate, 10 parts Glauber's salt and 3 parts sulfuric acid, then in a nitric acid bath of 10 parts ammonium molybdate. - Brit. 173,536; Fr. 518,821; Ger. 347,720.

Mentioned as a known mothproofing agent. - Brit. 500,386; Ger. 506,987.

PHOSPHONIUM COMPOUND, N-ACETYL-3,4-DICHLORCANILINOTRIPIPERIDYL-----CHLORIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, ALLYLTRIPHENYL-----CHLORIDE

Useful in combating moths or other animal or plant pests of animal fibers. - Brit. 312,163; Fr. 675,413; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, (1-BENZYL-2-NAPHTHOXY)TRIPHENYL-----HYDROXIDE

The condensation product of triphenylphosphine and 1 benzyl-2-naphthol is useful in combating moth larvae and microorganisms. - Dutch 25,565.

PHOSPHONIUM COMPOUND, (4-BENZYL-1-NAPHTHOXY)TRIPHENYL-----HYDROXIDE

The condensation product of triphenylphosphine oxide and 4-benzyl-1-naphthol is useful in combating moth larvae and microorganisms. - Dutch 25,565.

PHOSPHONIUM COMPOUND, (o-BENZYLPHENOXY)TRIPHENYL-----HYDROXIDE

The condensation product of triphenylphosphine oxide and o-benzylphenol is useful in combating moth larvae and microorganisms. - Dutch 25,565.

PHOSPHONIUM COMPOUND, (p-BENZYLPHENOXY)TRIPHENYL-----HYDROXIDE

The condensation product of triphenylphosphine oxide and p-benzylphenol is useful in combating moth larvae and microorganisms. - Dutch 25,565.

PHOSPHONIUM COMPOUND, BENZYLTRIETHYL-----CHLORIDE

Wool is mothproofed with a 2 percent solution of benzyltriethylphosphonium chloride in alcohol or other appropriate organic solvent. - Brit. 312,163; Fr. 675,413; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----CHLORIDE

Wool immersed in a 0.3 percent aqueous or alcoholic solution of benzyltriphenylphosphonium chloride is completely mothproofed and protected against the attack of Attagonus japonicus and mold fungi. - Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----CYANIDE

Ger. 506,987.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----FLUORIDE

Goods are mothproofed by spraying them with a 2 percent solution of benzyltriphenylphosphoniumfluoride in alcohol or other organic solvent. - Ger. 506,987.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----HYDROGEN CHROMOTROPATE

Ger. 506,987.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----NAPHTHALENESULFONATE

Paper pulp is made resistant against pests by mixing with it a suspension of benzyltriphenylphosphonium naphthalenemonosulfonate. - Ger. 506,987.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----1-NAPHTHALENESULFONATE

Wool is impregnated with an aqueous solution of naphthalene-alpha-sulfonic acid, pressed off and after-treated with an aqueous 0.2 percent solution of benzyltriphenylphosphonium sulfate.. The naphthalene-alpha-sulfonic acid salt of benzyltriphenylphosphonium is thus formed upon the fiber, rendering it mothproof. - U. S.

1,921,364.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----1-NAPHTHOL-5,7-DISULFONATE

U. S. 1,921,364.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----NITRATE

Brit. 312,163; Fr. 675,413; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----PERCHLORATE

Wool treated with a solution of benzyltriphenylphosphonium chloride is after-treated with an aqueous solution of potassium perchlorate, whereby the nearly insoluble perchlorate of benzyltriphenylphosphonium is formed upon the fiber. The wool thus treated is mothproof. - Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S.

1,921,364.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----SALICYLATE

U. S. 1,921,364.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----SULFATE

Goods which have been treated with chlorocresotinic acid anilidsulfonic acid are subsequently treated with benzyltriphenylphosphonium sulfate. - Brit. 312,163; Fr. 675,413; Ger. 506,987.

PHOSPHONIUM COMPOUND, BENZYLTRIPHENYL-----THIOCYANATE

U. S. 1,921,364.

PHOSPHONIUM COMPOUND, BIS(p-CHLORODIMETHYLAMINOBENZYL)TOLYL-----
CHLORIDE

PHOSPHONIUM COMPOUND, BIS(DIMETHYLAMINO)BENZYLPHENOXY-----CHLORIDE
Brit. 500,386.

PHOSPHONIUM COMPOUND, CARBETHOXYMETHYLTRIPHENYL-----CHLORIDE
Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, 4-CARBETHOXYPHENOXYTRIPHENYL-----HYDROXIDE

The condensation product of triphenylphosphine oxide and ethyl 4-hydroxybenzoate is useful for combating moth larvae and micro-organisms. - Dutch 25,565.

PHOSPHONIUM COMPOUND, omega-CARBOXYHEXADECYLMETHYLTRIPHENYL-----
BROMIDE

Ger. 506,987.

PHOSPHONIUM COMPOUND, CARBOXYMETHYLTRIPHENYL-----CHLORIDE, INNER
SALT

Brit. 312,163.

PHOSPHONIUM COMPOUND, CARBOXYMETHYLTRIPHENYL-----HYDROXIDE, INNER
SALT

Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, p-CHLOROBENZYLPHENOXYDIPIPERIDYL-----CHLORIDE
Brit. 500,386.

PHOSPHONIUM COMPOUND, CHLOROBENZYLTRIPHENYL-----1-NAPHTHALENE-
SULFONATE

U. S. 1,921,364.

PHOSPHONIUM COMPOUND, o-CHLOROBENZYLTRIPHENYL-----CHLORIDE
Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, p-CHLOROBENZYLTRIPHENYL-----CHLORIDE

Hair or fur is rolled in a drum with a mixture consisting of 90 percent talc and 10 percent p-chlorobenzyltriphenylphosphonium chloride for about one hour, whereby it is rendered mothproof. -

Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, p-CHLOROBENZYLTRIPERIDYL-----CHLORIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, p-CHLOROBENZYLTRIPERIDYL-----BROMIDE

An aqueous solution containing 2 percent of para-chlorobenzyltripiperidine-N-phosphonium bromide is used for treating textiles containing wool. After drying the goods prove to be immune from damage by moths. - Brit. 500,386.

PHOSPHONIUM COMPOUND, p-CHLOROBENZYLTRIS(ETHYLANILINO)-----CHLORIDE

PHOSPHONIUM COMPOUND, p-CHLORODIPIPERIDYLTOLYL-----CHLORIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, 4-CHLOROISOBUTYLPHENOXYTRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, o-CHLOROPHENOXYTRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, p-CHLOROPHENOXYTRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, CHLOROTHOXYTRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, (6-CHLORO-o-TOLOXY)TRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, (2-CHLORO-p-TOLOXY)TRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, DIAMINOBENZYL TOLYL-----CHLORIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, (DIBROMO-2-NAPHTHOXY)TRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, DICHLOROBENZYLTRIPHENYL-----CHLORIDE

U. S. 2,082,188; 2,130,435; 2,184,951.

A mixture of 10 parts of this salt and 90 parts of soap is used for mothproofing wool. Ten parts of this preparation are dissolved in 1,000 parts of water, and the wool is washed in this at 40° to 50° C. - Brit. 366,090; Fr. 717,976; Ger. 528,704.

PHOSPHONIUM COMPOUND, 3,4-DICHLOROBENZYLTRIPHENYL-----CHLORIDE

Brit. 453,053; Ger. 506,987.

PHOSPHONIUM COMPOUND, 2,6-DICHLOROBENZYLTRIPHENYL-----OCTADECYL-SULFONATE

Brit. 453,053.

PHOSPHONIUM COMPOUND, 3,4-DICHLOROBENZYLTRIPERIDYL-----CHLORIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, (2,4-DICHLOROPHENOXY)TRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, (2,6-DICHLOROPHENOXY)TRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, m-(DIETHYLAMINO)PHENOXYTRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, DODECYLTRIPERIDYL-----BROMIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, (o-ETHOXYPHENOXY)TRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, ETHYLENEBIS(TRIPHENYL-----BROMIDE)

PHOSPHONIUM COMPOUND, ETHYLTRIPHENYL-----BROMIDE

Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, ETHYLTRITOLYL-----IODIDE

PHOSPHONIUM COMPOUND, ETHYLTRIXYL----IODIDE

Brit. 312,163; Fr. 675,413; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, p-FORMYLPHENOXYTRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, HYDROXYETHYLTRIPHENYL-----CHLORIDE

Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, m-HYDROXYPHENOXYTRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, ISOBUTYLPHENOXY TRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, METHYLTRIPHENYL-----IODIDE

Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, METHYLTRIPERIDYL-----IODIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, 1-NAPHTHOXYTRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, 2-NAPHTHOXYTRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, NAPHTHYLTRIETHYL-----IODIDE

Brit. 312,163; Fr. 675,413.

PHOSPHONIUM COMPOUND, p-NITROBENZYLTRIPHENYL-----CHLORIDE

Brit. 312,163; Fr. 675,413; Ger. 506,897; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, p-NITROPHENOXYTRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, PENTAMETHYLENEIS(TRIPHENYL-----BROMIDE)

Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, PHENOXYTRIPHENYL-----HYDROXIDE

PHOSPHONIUM COMPOUND, PHENOXYTRI-o-TOLYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, TETRAETHYL-----IODIDE

PHOSPHONIUM COMPOUND, TETRAISOBUTYL-----SULFATE

Brit. 312,163; Fr. 675,413; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, (TETRAHYDRO-2-NAPHTHOXY)TRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, TETRAPHENYL-----BROMIDE

Brit. 312,163; Fr. 675,413; Ger. 506,987; U. S. 1,921,364.

PHOSPHONIUM COMPOUND, 2,4,5-TRICHLOROBENZYLTRIPHENYL-----CHLORIDE

Ger. 506,987.

PHOSPHONIUM COMPOUND, 2,4,5-TRICHLOROBENZYLTRIPIPERIDYL-----CHLORIDE

Brit. 500,386.

PHOSPHONIUM COMPOUND, TRICHLOROPHENOXYTRIPHENYL-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, TRIETHYLNAPHTHYL-----CHLORIDE

U. S. 1,921,364.

PHOSPHONIUM COMPOUND, TRIPHENYLTHYMOXY-----HYDROXIDE

PHOSPHONIUM COMPOUND, TRIPHENYL-m-TOLOXY-----HYDROXIDE

PHOSPHONIUM COMPOUND, TRIPHENYL-o-TOLOXY-----HYDROXIDE

PHOSPHONIUM COMPOUND, TRIPHENYL-p-TOLOXY-----HYDROXIDE

PHOSPHONIUM COMPOUND, TRIPHENYL-3,5-XILOXY-----HYDROXIDE

Dutch 25,565.

PHOSPHONIUM COMPOUND, p-XYLYLENEBIS(TRICHLORO-----BROMIDE)

Fr. 675,413; Ger. 506,987.

PHOSPHONIUM COMPOUND, p-XYLYLENEBIS(TRIPHENYL-----BROMIDE)

Brit. 312,163; U. S. 1,921,364.

PHOSPHONIUM COMPOUNDS

A mixture of 90 parts soap with 10 parts phosphonium salt is used for mothproofing wool. - Brit. 366,090; Fr. 717,976; Ger. 528,704.

Salts of quaternary phosphonium bases are used for mothproofing wool. - Ger. 506,987.

PHOSPHONIUM COMPOUNDS, ALKYL

Less effective than organic compounds containing both nitrogen and pentavalent phosphorus as mothproofing agents. - Brit. 500,386.

PHOSPHONIUM COMPOUNDS, QUATERNARY-----SALTS.

The salts of quaternary phosphonium bases are claimed as products capable of protecting hair, furs, feathers, and animal textile products against the attack of animal and plant pests, such as moths, Attagenus japonicus, certain species of bacteria, mold fungi, and the like. - U. S. 1,921,364.

PHOSPHORIC ACID

Salts of quaternary phosphonium bases with phosphoric acid or acylphosphoric acids are used for mothproofing. - Ger. 506,987.

PHOSPHORIC ACID, 2-BUTOXYETHYL DIETHYL ESTER

Mothproofing solutions are prepared by mixing aryl sulfonamides with diethylbutylglycolphosphate and diluting this solution with benzine, carbon tetrachloride or trichlorethylene. - Brit. 407,356.

Articles to be mothproofed are treated with a benzine solution containing 5 percent of a mixture of 2 parts of 3,4-dichlorobenzene-sulfomethylamide and 3 parts of diethylbutylglycolphosphate. - Fr. 42,266.

PHOSPHORIC ACID, 2-(2-BUTYLETHOXY)ETHYL ESTER

A mixture of 3 parts of this and 2 parts of 3,4-dichlorobenzene-sulfomethylamide in 100 parts benzine is used to mothproof wool. - Ger. 558,509; U. S. 1,955,207.

PHOSPHORIC ACID, DI-o-BIPHENYLYL PHENYL ESTER

Woolen cloth impregnated with a 3 or 5 percent solution of monophenyl-di-(ortho-xenyl) phosphate in alcohol or carbon tetrachloride is resistant to black carpet beetle larvae, Attagenus piceus. - U. S. 2,128,189.

PHOSPHORIC ACID, ESTERS

Mothproofing solutions are prepared by mixing an aryl sulfonamide with a phosphoric acid ester and diluting the mixture with benzine, carbon tetrachloride or trichlorethylene. - Brit. 407,356; Fr. 42,266; Ger. 558,509; U. S. 1,955,207.

Less effective than organic compounds containing both nitrogen and pentavalent phosphorus as mothproofing agents. - Brit. 500,386.

Mentioned as effective mothproofing agents but ineffective against Anthrenus and Attagenus. - U. S. 1,955,207.

PHOSPHORUS NITROCHLORIDE, REACTION PRODUCT WITH N,N-DIETHYLETHYLENE-DIAMINE

Brit. 500,386.

PHOSPHOTUNGSTIC ACID

Mentioned as a known mothproofing agent. - Brit. 500,386;
Ger. 506,987.

100 parts by weight of wool are treated for 1 hour with 3 parts sodium phosphotungstate, 10 parts Glauber's salt and 3 parts sulfuric acid. - Brit. 173,536; Fr. 518,821; Ger. 347,720; 347,849.

PHTHALIC ACID

This acid and its butyl, isobutyl, amyl, neutral, and acid esters are claimed for mothproofing purposes in Ger. 442,901.

The fabric is first treated with a solution of the soda or potash salt of trichloro or tetrachlorophthalic acid and is then treated with a solution of a metallic salt, such as lead, zinc, calcium, barium, or aluminum, which will yield a precipitate within the pores of the fabric. - U. S. 1,085,783.

Reference is made to the use of alcoholic solutions of phthalic acids and their compounds for mothproofing wool. - Ger. 485,101.

PHTHALIC ACID, ETHYL ESTER

Ineffective. - Jackson and Wassell (18).

The reaction product of ethyl phthalate with boron trifluoride is used to mothproof wool. - Ger. 502,600; U. S. 1,757,222.

PHTHALIC ACID, METHYL ESTER

In the mothproofing of wool, fur, and the like there is used a solution of a mothproofing agent in an organic solvent comprising a principal solvent and a second solvent or solvent-mixture which is more difficultly volatile. This second solvent prevents the discoloration of dark materials due to the deposition of white mothproofing material. Phthalic acid methyl ester is suitable for this purpose. - Brit. 330,598; Ger. 488,138.

PHTHALIC ACID, PHENYLHYDRAZIDE

Brit. 238,287; Ger. 402,341.

PHTHALIC ACID, PHENYLMETHYLHYDRAZONE

Ger. 460,545.

PHTHALIC ACID, 4-CHLOROSULFO-, AMYL ESTER

Fr. 713,082; 735,959; Ger. 588,851.

PHTHALIC ACID, DICHLORO-, PHENYLHYDRAZIDE

Brit. 238,287; Fr. 581,037.

PHTHALIC ACID, 3-HYDROXY-, BUTYL ESTER

The condensation product of 3-hydroxyphthalic acid butyl ester and triphenylphosphine oxide is used to mothproof wool. - Ger. 521,205.

PHTHALIC ACID, 4-HYDROXY-, BUTYL ESTER

The condensation product of triphenylphosphine oxide with 1-hydroxy-3, 4-phthalic acid butyl ester, is useful for mothproofing wool. - Brit. 326,137.

PHTHALIC ACID, SULFO-, AMYL ESTER

Fr. 713,082 and 735,959.

Wool gabardine is boiled for 1 hour in a bath (1:40) containing 10 percent of Glauber's salt, 4 percent of sulfuric acid and 4 percent of the ester salt prepared by heating sulfophthalic acid anhydride with amyl alcohol, neutralizing, and drying. (Percentage based on the weight of wool.) The material is rendered mothproof by this treatment. - Ger. 588,851.

PHTHALIC ACID, SULFO-, BUTYL ESTER

Fr. 713,082 and 735,959.

PHTHALIC ACID, SULFO-, CETYL ESTER

The esters obtained from sulfophthalic acid and a mixture of stearyl and cetyl alcohols constitute a mothproofing agent. - Fr. 713,082, and 735,959.

PHTHALIC ACID, SULFO-, p-CHLOROPHENYL ESTER

Wool is boiled for one hour in a bath (1:40) which contains 10 percent of Glauber's salt, 4 percent of sulfuric acid and 2 percent of the ester salt obtained from sulfo-phthalic acid and p-chlorophenol (based on the weight of the wool). The wool is rendered mothproof. - Ger. 588,851.

Animal fibers are mothproofed by the application of a water soluble protective agent, e.g., the 4-chlorophenol ester of sulfophthalic acid, together with a lubricant used in one of the manufacturing steps. - Brit. 453,053.

PHTHALIC ACID, SULFO-, ETHYL ESTER

PHTHALIC ACID, SULFO-, METHYLCYCLOHEXYL ESTER

PHTHALIC ACID, SULFO-, sec-OCTYL ESTER

Fr. 713,082 and 735,959.

PHTHALIC ACID, SULFO-, PALMITYL ESTER

PHTHALIC ACID, SULFO-, STEARYL ESTER

An ester salt is prepared by warming sulfophthalic acid anhydride with a commercial mixture of palmityl and stearyl alcohols, neutralizing, and drying. Wool is boiled for 1 hour in a bath (1:40) containing 2 percent of this ester salt, 10 percent of Glauber's salt and 4 percent of sulfuric acid (based on the weight of wool.) Wool so treated is mothproof. - Ger. 588,851; Fr. 713,082 and 735,959.

PHTHALIC ACID, SULFO-, p-TOLYL ESTER

Fr. 713,082 and 735,959.

PHTHALIMIDE, N-BROMO-

Ger. 419,464.

PINE OIL

Insects and eggs in garments, rugs, furs, etc. are destroyed by fumigating with carbon disulfide, carbon tetrachloride or p-dichlorobenzene mixed with pine oil to mask the odor. - U. S. 1,630,836.

PINE NEEDLE OIL

A mixture of 1 part pine needle oil with from 5 to 10 times as much carbon disulfide is used for fumigating clothing in a tightly closed vault. - U. S. 1,630,836.

PIPERIDINE, ALKALOIDAL, DERIVATIVES

Alkaloidal piperidine derivatives are added to a drenching solution for hides to serve as a mothproofing agent. - Ger. 595,849.

PIPERIDINE FLUOSILICATE

An insect-proofing agent for textiles. - Brit. 391,141.

PIPERIDINE FLUOSILICATE, 1-(2-METHACRYLOXYETHYL)-

U. S. 2,163,104.

PIPERIDINIUM COMPOUND, BIS(2-CHLORO-5-HYDROXYBENZYL)-----CHLORIDE

U. S. 2,200,603.

PIPERIDINIUM COMPOUND, 5-BROMO-4'-CHLORO-1-HYDROXY-2-METHYLDIPHENYL---
CHLORIDE

Furs to be preserved against vermin and particularly against moths are powdered with a mixture consisting of 93 weight parts of talcum and 7 weight parts of 5-bromo-2-methyl-4'-chloro-1-hydroxy-dibenzyl-piperidinium chloride. - U. S. 2,200,603.

PITCH

Pitch is mentioned as an example of an adhesive and filler to be used with aromatic thiocyanates as mothproofing agents and as aphicides. - Brit. 325,910.

POTASH SOAP

An ingredient of mothproofing solutions described in Ger. 357,063 and 416,706.

POTASSIUM ACID OXALATE

Potassium acid oxalate may be added to drenching solutions for hides which also contain mothproofing materials. - Ger. 595,849.

POTASSIUM AMMONIUM FLUORIDE

A solution of 10 grams potassium ammonium fluoride per liter of 50 percent alcohol is used for mothproofing furs. - Ger. 485,101.

POTASSIUM ANTIMONATE

Ger. 416,706.

POTASSIUM ARSENATE

A mothproofing agent for hides. - Ger. 595,849.

POTASSIUM BOROTARTRATE

Ineffective. - Jackson and Wassell (18).

POTASSIUM CARBONATE

One of the ingredients of the following mothproofing solution: white soap 1,000 grams; potassium carbonate 125 grams; basic bismuth nitrate 250 grams; white arsenic 1000 grams; water 1 liter. - Fr. 545,930.

POTASSIUM CYANIDE

Mentioned as one of the well known materials used in combating clothes moths. - Brit. 19,688 of 1912; Ger. 258,405; U. S. 1,097,406.

POTASSIUM DIFLUORODITHIONATE

A 2 percent solution of potassium difluorodithionate is used for mothproofing goods. - Ger. 500,333.

POTASSIUM FLUOPHOSPHATE

100 kg. of wool in 10 times the quantity of hot or cold water is treated with 2 kg. monopotassium monofluorophosphate, with or without the addition of organic or inorganic acids and salts, subsequently rinsed and dried in the customary manner. - Brit. 295,742; Ger. 500,333.

POTASSIUM FLUORIDE

An ingredient of mothproofing solutions described in Brit. 453,053; U. S. 1,494,085; 1,515,182; 1,634,790; 1,634,791.

POTASSIUM FLUOSILICATE

U. S. 1,634,790 and 1,634,791.

POTASSIUM FLUOSULFONATE

U. S. 1,448,276.

POTASSIUM HYDROFLUORIDE

A mixture of 10 parts potassium hydrofluoride and 90 parts of an acid soap is used to mothproof wool. Sodium fluosilicate may be mixed with the potassium hydrofluoride. - Brit. 366,090.

100 kg. of material are mothproofed by treating it in 10 times the quantity of hot or cold water, with 2 kg. of potassium bifluoride, with or without the addition of organic or inorganic acids and salts, and subsequently rinsing in the customary manner. - Brit. 295,742; Fr. 646,479; Ger. 468,914.

Twenty parts of potassium hydrofluoride with 80 parts of oleylmethylethanesulfonic acid are used as a 1 percent aqueous solution. - U. S. 2,130,435; 2,068,188.

POTASSIUM HYDROGEN TARTRATE

Brit. 295,742.

POTASSIUM OXALATE HYDROFLUORIDE

Goods are mothproofed with a 2 percent solution of the addition product of 1 mole of mono-potassium oxalate with 1 mole of hydrofluoric acid. - Ger. 500,333.

POTASSIUM PHTHALIMIDE

Ineffective. - Jackson and Wassell (18).

POTASSIUM SILICATE

100 parts of wool are boiled for one hour in a bath containing 5 parts potassium silicate, 20 parts Glauber's salt, and 5 parts concentrated sulfuric acid, after which the wool is rinsed and dried. - Brit. 173,536.

Potassium silicate, Glauber's salt and sulfuric acid in water were found ineffective as mothproofing agents. - Jackson and Wassell (18).

PROPANE, 2,2-BIS(2,5-DICHLOROPHENYLSULFONYL)-

Brit. 484,448.

PROPANE, 1-CHLORO-2-METHYL-2-NITRO-

A concentration of 8 mg. per liter killed 50 percent and 12 mg. per liter killed 70 percent of black carpet beetle larvae exposed to this fumigant for 24 hours. Air saturated with the vapor killed 60 percent of clothes moth larvae in 24 hours. - U. S. 2,289,546.

PROPANE, DIBROMO-, DIALKYLACETAL

U. S. 2,129,025.

PROPANE, 1,3-DICHLORO-2-METHYL-2-NITRO-

Air saturated with the vapor of this fumigant killed 100 percent of black carpet beetle larvae exposed 24 hours and 100 percent of clothes moth larvae exposed 4 hours. At 4 mg./liter 80 percent of the clothes moth larvae were killed in 4 hours. - U. S. 2,289,546.

PROPANE, DIPHENYL-

U. S. 2,005,797.

1,2-PROPANEDIOL, DICHLORO-

U. S. 2,129,025.

PROPANESULFONYL FLUORIDE

U. S. 2,114,577.

PROPANOL, o-n-AMYLPHENOXY-

PROPANOL, p-sec-BUTYLPHENOXY-

PROPANOL, m-CYCLOHEXYLPHENOXY-

PROPANOL, p-CYCLOHEXYLPHENOXY-

PROPANOL, o-n-HEXYLPHENOXY-

U. S. 2,134,001.

2-PROPANONE, CHLORO-

Mentioned as a known insecticide. - U. S. 2,129,025.

2-PROPANONE, CHLORO-, DIETHYL ACETAL

2-PROPANONE, CHLORO-, DIMETHYL ACETAL

2-PROPANONE, CHLORO-, GLYCOL ACETAL

2-PROPANONE, 1,1-DICHLORO-, DIMETHYL ACETAL

U. S. 2,129,025.

2-PROPANONE, 1,3-DICHLORO-, DIMETHYL ACETAL

The product obtained by melting together equal parts of 1,3-dichloroacetone dimethylketal and 1,4-dichlorobenzene and grinding the cooled mixture is an effective agent for combating clothes moths. - U. S. 2,129,025.

PROPYL ACETATE

Forms addition compounds with antimony chloride, boron fluoride, calcium chloride, magnesium chloride and titanium chloride. -

Brit. 426,398.

PROPYLENE OXIDE

PROPYLENE OXIDE, HALOPHENOXY-

Fr. 800,582; U. S. 2,202,169.

PROPYL FORMATE

Same as for propyl acetate. - Brit. 426,398.

PROTEINS

A constituent of an adhesive composition which may be used for mothproofing. - Brit. 463,725.

PROTEINS, ALKYLATED

Goods containing proteins (e.g., wool, skins, feathers) are permanently protected against insects by treating them at a temperature above 110° C. with a compound selected from the group consisting of alkylene oxides, alkylene imines, and alkylene sulfides until the amino groups of the protein material are substantially alkylized. - U. S. 2,202,169.

PSEUDOCUMENE

Furs maintained in the presence of pseudocumene in a well-closed vessel are not protected against attack by moth caterpillars. - Brit. 333,583; Fr. 670,674; Ger. 504,886.

PSEUDOCUMENE, FLUORO-

Furs maintained in the presence of fluoro-pseudocumene in a well-closed vessel are protected against attack by moth caterpillars. - Brit. 333,583; Fr. 670,674; Ger. 504,886.

PSEUDOTHIOHYDANTOIN

Brit. 407,691.

PSEUDOUREA, CAPROYLPHENYLTHIO-

Goods treated with a solution so that 1 to 2 percent of this substance remains on them are rendered mothproof. - Aust. 123,881; Brit. 337,823; Fr. 39,013; Ger. 546,097.

PSEUDOURA, PHENYLVALERYLTHIO-

This compound dissolved in tetrachloroethane is used for mothproofing wool. - Brit. 337,823; Fr. 39,013; Ger. 546,097.

PYRAZOLONE

Pyrazolone is dissolved in a suitable solvent, such as benzene, and the solution sprayed upon the goods. - Brit. 238,287; Fr. 581,037; Ger. 402,341; U. S. 1,562,510.

PYRAZOLINIUM COMPOUND, BIS(NITROPHENYL)METHYL-----CHLORIDE

Brit. 238,287; Fr. 581,037; U. S. 1,562,510

PYRETHRUM EXTRACT

To protect persons wearing summer clothes from the stings of gnats, the garments are treated for 15-20 minutes in a bath prepared as follows: In distilled water at 30-40° is dissolved 6 percent (based on the weight of the goods) of curd soap, olive-oil soap or other good textile soap. In the warm soap solution there is emulsified 2 percent of oil of cloves or 1 percent of oil of cloves and 1 percent of bay oil and 0.1 percent of pyrethrum extract. - Ger. 557,760.

Ineffective. - Jackson and Wassell (18).

PYRETHRUM FLOWERS

Pyrethrum powder killed 100 percent of larvae on infested flannel, even when used in proportions as low as 4 parts of pyrethrum powder to 96 parts of flour. While no test with pyrethrum powder was made against adult clothes moths, it is safe to say that the powder would kill the adults. Clothing dusted with pyrethrum powder would be protected from larvae resulting from any eggs that might be present. - Scott, Abbott and Dudley (38).

Pyrethrum powder, if fresh, kills clothes moth larvae, but is considered inferior to naphthalene, paradichlorobenzene and camphor. - Back (5).

"When fresh, this powder is at best a repellent. It will, however, destroy the larvae of moths in clothes that are thoroughly dusted with it, and then placed in a tightly constructed chest or trunk, or wrapped in unbroken paper". - Gershenfeld (16).

Powdered pyrethrum is a clothes moth preventive. - Mullin (24), (25).

A mothproofing material is prepared by saponifying fatty acids and vegetable oils with soda, potash, and ammonia, and adding either a maceration or a decoction of the powder of pyrethrum in a petroleum lubricating oil. - Fr. 699,410.

PYRETHRUM LEAVES

Fr. 699,410.

PYRETHRUM STEMS

Pyrethrum stems, dusted, proved ineffective against clothes moth larvae. Back (5); Mullin (24); Scott, Abbott and Dudley (38).

PYRIDINE, ALKALOIDAL, DERIVATIVES

Alkaloidal pyridine derivatives are added to a drenching solution for hides, to serve as a mothproofing agent. - Ger. 595,849.

PYRIDINE FLUOSILICATE

Brit. 391,141.

PYRIDINE FLUOSULFONATE

U. S. 1,448,276.

PYRIDINE HYDROFLUORIDE

A jacket may be mothproofed by a solution of 10 parts of pyridine hydrofluoride in 400 parts of water and 600 parts of alcohol. - Ger. 485,101.

PYRIDINIUM COMPOUND, DI-(N-OCTYL-----FLUOSILICATE

U. S. 2,150,601.

PYRIDINIUM COMPOUND, MENAPHTHYL-----CHLORIDE

On treating wool covers with a 2 to 3 percent solution of menaphthylpyridinium-chloride, for instance in chloroform, the wool-covers are protected against moths after the chloroform has evaporated. - Brit. 483,368.

PYRIDINIUM COMPOUND, XYLYL-----CHLORIDE

Woolen goods are treated on the washing machine in an aqueous bath of 1:30 with 3 percent xylyl-pyridinium chloride for three quarters of an hour at 40-50° C. and finished in the usual manner. The goods treated in this manner are mothproof. - Brit. 483,368.

PYRIMIDINE

Cyclic derivatives of the pyrimidine series of thiourea are used for mothproofing purposes. - Ger. 547,057.

PYROCATECHOL

Ineffective. - Jackson and Wassell (18).

PYROLIGNEOUS ACID

Curled hair is mothproofed by impregnating it with a wood distillate, such as creosote or pyroligneous acid or a combination of the two, and drying so as to leave the protecting agent permanently combined therewith. - U. S. 368,739.

QUASSIA

Quassia chips dusted proved ineffective against clothes moth larvae. - Scott, Abbott and Dudley (38); Back (5); Mullin (24).

Material is mothproofed with a mixture of 93 percent water, 3 percent carbolic acid, and 4 percent tincture of quassia. - U. S. 1,591,902.

A mothproofing composition is prepared by mixing 300 cc. of extract of bitter aloes, 500 cc. of quassia extract (prepared by boiling 100 grams of solid extract of quassia in 1/2 liter of water and filtering), 4 pounds sodium fluoride, and 2 pounds anhydrous sodium sulfate. - U. S. 1,789,565.

QUASSIN

Brit. 399,938.

QUILLAJA

A mothproofing composition comprises a mixture of alkaloidal salts from seeds of Lupinus and saponins of Quillaja, the sodium salt of an inorganic acid other than sulfuric, and a metal mordant. - Can. 247,378; U. S. 1,885,292.

Materials are treated in a 1 percent water solution of 4 parts brucine sulfate, 1 part saponin of Quillaja, and 2 parts zinc sulfate for 30 minutes at 80° F. - Brit. 327,009.

An extract of Quillaja bark is an ingredient of mothproofing compositions claimed in Brit. 230,203; Ger. 419,463; 421,100; U. S. 1,610,167. For example a dry Quillaja saponin powder is mixed with talcum. - Ger. 419,463.

QUINICINE HYDROCHLORIDE

QUINICINE OLEATE

Effective. - Jackson and Wassell (18).

QUINIDINE

Quinidine, its derivatives and salts (e.g. hydrochloride, oleate and sulfate) are claimed for mothproofing purposes in Brit. 263,092; Fr. 625,380; Ger. 485,573; Swiss 125,139; U. S. 1,615,843.

Quinidine is one of the bases which has some mothproofing value, but insufficient for practical use. The salts (sulfate, oxalate, salicylate and sulfosalicylate) are absolutely useless as mothproofing agents. Quinidine combined with oleic acid is less effective than oleic acid alone. - Minaeff and Wright (23).

Wool treated with an alcoholic solution of quinidine sulfate has withstood attack in moth-stocked cupboards. - Jackson and Wassell (18).

QUINIDINE DERIVATIVES

Mentioned as mothproofing agents that are affected by sunlight. - U. S. 2,127,252.

QUINIDINE HYDROCHLORIDE

U. S. 1,615,843.

Effective. - Jackson and Wassell (18).

QUINIDINE HYDROFLUORIDE

QUINIDINE SULFATE

U. S. 1,615,843.

Effective alone or mixed with dry-cleaning soap in naphtha. - Jackson and Wassell (18).

QUININE

Belg. 379,339; Brit. 399,938.

Quinine chloride and quinine sulfate are applied in the form of 1 percent solutions. - Aust. 99,430; U. S. 1,615,843.

Although quinine possesses some mothproofing value, this is insufficient for practical use. The salts of quinine (sulfate, oxalate, salicylate and sulfosalicylate) are absolutely useless as mothproofing agents. Quinine combined with oleic acid is less effective than oleic acid alone. - Minaeff and Wright (23).

QUININE HYDROCHLORIDE

Effective. - Jackson and Wassell (18).

QUININE OLEATE

Effective. - Jackson and Wassell (18).

Fabrics treated with quinine in combination with oleic acid are not effectively mothproofed. - Minaeff and Wright (23).

QUININE SULFATE

Aust. 99,430.

Effective. - Jackson and Wassell (18).

Absolutely useless as a mothproofing agent. - Minaeff and Wright (23).

QUINOIDICINE (A MIXTURE OF QUINATOXINS PREPARED FROM QUINOIDINE).

QUINOIDICINE OLEATE.

Effective. - Jackson and Wassell (18).

QUINOIDINE

Brit. 263,092; U. S. 1,615,843.

A mothproofing solution is prepared by combining quinoidine and a fatty acid (preferably oleic or stearic) and dissolving in a dry solvent. - U. S. 1,694,219.

Although quinoidine is the least expensive of the cinchona alkaloid products and therefore desirable from a commercial viewpoint, its commercial use as a moth repellent is limited by the fact that it is so dark that it noticeably colors materials treated with its solutions. - Jackson and Wassell (18).

QUINOIDINE HYDROCHLORIDE

Effective. - Jackson and Wassell (18).

QUINOIDINE OLEATE

U. S. 1,694,219.

Effective. - Jackson and Wassell (18).

QUINOLINE

Sulfonic and carboxylic acid derivatives of quinoline are claimed for mothproofing purposes in Ger. 344,266.

QUINOLINE FLUOSILICATE

Brit. 391,141.

Wool, fur, hair, hide, and the like which have been immersed in a 1 percent aqueous solution of quinoline fluosilicate and dried are mothproofed. - Brit. 396,064; U. S. 2,075,359.

QUINOLINE FLUOSULFONATE

U. S. 1,448,276.

QUINOLINE HYDROFLUORIDE

QUINOLINE SALICYLATE

QUINOLINE SULFATE

8-QUINOLINOL

Ineffective. - Jackson and Wassell (18).

RADIOACTIVE METALS

Water soluble salts of radio-active metals, especially uranium, are used to precipitate casein in fabrics for mothproofing purposes. - U. S. 1,688,717.

RARE EARTHS

In the manufacture of paper wallboard, 1 percent of mixed rare earth metal carbonate is incorporated with the pulp and when finished the wallboard is sprayed with a 10 percent solution of raw linseed oil in white spirit. - Brit. 247,242; U. S. 1,739,840.

In order to mothproof woollens casein is precipitated in them with a water soluble salt of a rare earth metal, such as cerium, thorium, or lanthanum. - U. S. 1,688,717.

Textiles are made waterproof, mothproof and mildewproof by treating them with an emulsion of petrolatum and then with a solution of a rare earth salt, such as cerium chloride. - U. S. 1,799,047.

RESIN

A resin, such as copal resin, is used with an odorous insecticidal material in impregnating wood to form an artificial cedar board. - Ger. 470,458.

RESIN ACIDS

A resin acid, such as abietic acid, or a resin soap is used with an odorous insecticidal material in impregnating wood to form an artificial cedar board. - Ger. 470,458.

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium, and thallium) of resin acid are used for mothproofing. - Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

RESORCINOL

The condensation product of triphenylphosphine oxide with resorcinol is useful for mothproofing wool. - Brit. 326,137; Ger. 521,205.

Resorcinol, dissolved in alkali, is added to a solution of sodium fluoride. The resulting solution is employed for the preservation of cellulosic materials from rodents, insects. etc. - Fr. 677,340.

RESORCINOL, AMYLETHYL-, HALOGEN DERIVATIVE

RESORCINOL, BROMO-beta-ETHYLHEXYL-

RESORCINOL, BUTYLMETHYL-, HALOGEN DERIVATIVE

RESORCINOL, CHLORO-DIMETHYLETHYL-

RESORCINOL, CHLORO-beta-ETHYLHEXYL

U. S. 2,093,778.

RESORCINOL, CYCLOHEXYL-

Fr. 48,395; 1st addition to 802,508.

Brit. 495,639 claims 4-cyclohexylresorcinol.

RESORCINOL, beta-ETHYLHEXYLIODO-

RESORCINOL, HEXYLPROPYL-, HALOGEN DERIVATIVE

U. S. 2,093,778.

RESORCYLIC ACID

Ger. 506,770.

alpha-RESORCYLIC ACID

Brit. 299,055.

beta-RESORCYLIC ACID

Brit. 299,055; Fr. 661,727.

RHODANINE

Brit. 407,691.

RICINOLEIC ACID

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium and thallium) of ricinoleic acid are used for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

RICINOLEIC ACID, SULFONATED

An ingredient of a mothproofing solution.-U. S. 1,634,793.

Raw horse hair is immersed in a warm alkaline solution of 2 percent by weight of a sulforicinoleate for 12 hours. Then, without rinsing, it is immersed in a solution containing ammonium stearate to the amount of 5 percent by weight of the material treated. The hair is lightly squeezed and is then immersed in a suitable solution of magnesium chloride. It is finally subjected to prolonged rinsing and to washing and drying by the usual methods. After this treatment it is waterproof and insect proof.-Brit. 403,957.

ROSIN

A rot-proof and termite proof fiber product for the manufacture of building board, has the following composition: Fiber 1,000 lbs.; rosin size (bone dry basis) 20 lbs.; zinc-meta-arsenate 3 lbs.; water, about 50,000 lbs. This pulp is thoroughly mixed and pressed out.-U. S. 1,884,367.

ROTENONE

Petroleum naphtha boiling between 450 and 550° F. is the preferred solvent when it is desired to apply the active principle by means of a spray.-U. S. 1,854,948.

Mentioned as a mothproofing agent that is affected by sunlight.-U. S. 2,127,252.

RUBBER LATEX

An ingredient of an adhesive mothproofing composition.-Brit. 463,725.

SAFRANINE Y.

Wool dyed with safranine Y was badly damaged by clothes moth larvae and black carpet beetle larvae.-Minaeff (22).

SALICIN

Ineffective.-Jackson and Wassell (18).

SALICYLAMIDE, 3,5-DICHLORO-N-PENTADECYL-

Brit. 497,214; Fr. 48,395, 1st addition to 802,508.

SALICYLIC ACID

Wool is mothproofed by placing 100 kg. of the goods in 1,000 liters of water containing 2 kg. of salicylic acid with or without the addition of organic or inorganic acids and salts.-Brit. 299,055; Fr. 661,727; Ger. 506,770.

Salicylates of alkaloids (e.g. quinine) were found to be absolutely useless as mothproofing agents.--Minaeff and Wright (23).

SALICYLIC ACID, 2-NAPHTHYL ESTER

Ineffective.--Jackson and Wassell (18).

SALICYLIC ACID, PHENYL ESTER

Woolen materials are treated in a 1.5 percent carbon tetrachloride solution of 3 parts brucine alkaloid, and 3 parts phenyl salicylate for 10 minutes; or materials are treated in a 1.25 percent solvent naphtha solution of 4 parts brucine oleate and 6 parts phenyl salicylate for 15 minutes.--Brit. 327,009; Ger. 526,611.

Animal fibers are mothproofed by the application of a water soluble protective agent, e.g., chlorosalol, together with a lubricant used in one of the manufacturing steps.--Brit. 453,053.

SALICYLIC ACID, SUBSTITUTED

Brit. 274,425; Can. 280,549; Fr. 635,973; Ger. 469,094; U. S. 1,734,682.

SALICYLIC ACID, 5-BROMO-3-METHYL-

SALICYLIC ACID, 5-CHLORO-

SALICYLIC ACID, 5-CHLORO-, SULFURIZED

Brit. 274,425; Can. 280,549; Fr. 635,973; Ger. 469,094; U. S. 1,734,682.

SALICYLIC ACID, 5-CHLORO-3-(o-CHLOROPHENYLSULFAMYL)-

SALICYLIC ACID, 5-CHLORO-3-(p-CHLOROPHENYLSULFAMYL)-

Brit. 324,962.

SALICYLIC ACID, 5-CHLORO-3-METHYL-

Brit. 274,425; Can. 280,549; Fr. 635,973; Ger. 469,094; and U. S. 1,734,682.

SALICYLIC ACID, 5-CHLORO-N-METHYL-3-PHENYLSULFAMYL-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

SALICYLIC ACID, DICHLORO-

Can be used with soap.-Brit. 366,090; Fr. 40,647.

Wool to be mothproofed is washed with a soap which consists of 80 parts of a neutral or acid soap and 20 parts of dichlorosalicylic acid.-Ger. 581,990.

Eighty parts of oleyl-hydroxyethanesulfonic acid in the form of its sodium salt and 20 parts of dichlorosalicylic acid are intimately mixed. Wool treated in a solution of 20 parts of this soap in 1000 parts of water is cleaned and rendered mothproof.-U. S. 2,082,188; 2,130,435; 2,184,951.

SALICYLIC ACID, 3,5-DICHLORO-

Brit. 274,425; Can. 280,549; Fr. 635,973; Ger. 469,094; U. S. 1,734,682.

Animal fibers are mothproofed by the application of 3,5-dichlorosalicylic acid, together with a lubricant used in one of the manufacturing steps.-Brit. 453,053.

SALICYLIC ACID, 3,5-DICHLORO-, DODECYL ESTER

Brit. 497,214; Fr. 48,395, 1st addition to 802,508.

SALICYLIC ACID, 2',5-DICHLORO-3-PHENYLSULFAMYL-

SALICYLIC ACID, 4',5-DICHLORO-3-PHENYLSULFAMYL-

Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

SALICYLIC ACID, 3,3'-DITHIODI-

This compound and its derivatives, e.g., anilide, halogenanilide, etc. are mothproofing agents.-U. S. 1,734,682.

SALICYLIC ACID, HALO-

These acids, which per se exert a mothrepelling action, may be combined with a quaternary phosphonium base.-U. S. 1,921,364.

SALICYLIC ACID, 5-METHYL-

Brit. 274,425.

SALICYLIC ACID, 3,5-DIMETHYL-

Brit. 274,425; Can. 280,549; Fr. 635,973; and Ger. 469,094.

SALICYLIC ACID, 3-METHYL-, SULFURIZED

U. S. 1,734,682.

SALICYLIC ACID, 5-METHYL-, SULFURIZED

Brit. 274,425; Can. 280,549; Fr. 635,973; Ger. 469,094; and U. S. 1,734,682.

SALICYLIC ACID, 3,3'-METHYLENEBIS(5-CHLORO-, DIHEXYL ESTER

Brit. 497,214; Fr. 48,395, 1st addition to 802,508.

SALICYLIC ACID, SULFO-

The sulfosalicylates of alkaloids (e.g. quinine) were found to be absolutely useless as mothproofing agents.-Minaeff and Wright (23).

SAPONINS

Saponins from quillai bark enter into the composition of mothproofing solutions described in Brit. 230,203; Can. 247,378; Ger. 421,100; and U. S. 1,610,167.

Used in various mixtures with the formate, acetate, and hydrochloride of brucine anilide.-U. S. 2,015,533.

Saponins may be employed in a soluble fluoride mothproofing liquid to lower the surface tension and facilitate the penetration of the liquid into the fibers to which it is applied.-U. S. 1,901,960.

SAVIN

Young shoots of Juniperus sabina L.

Reference is made to the use of aqueous extracts of savin for mothproofing wool.--Ger. 488,307.

SAWDUST

Used as a diluent for:

Aromatic hydroxy mothproofing compounds.--Brit. 495,639; 497,214.

Ethers or esters of aromatic hydroxy compounds.--Brit. 495,761.

Halogenated phenols.--Brit. 474,600.

SELENIC ACID

Wool is mothproofed with 6 percent naphthylamine black, 10 percent Glauber's salt, and 4 percent selenic acid.--Brit. 340,318; Ger. 524,590; U. S. 1,903,864.

A mothproofing soap is made by mixing 10 parts selenic acid with 90 parts of an acid soap.--Brit. 366,090; Ger. 541,279. Wool to be mothproofed is washed in a solution of 10 parts of this soap in 1,000 parts of water at 40-50° and afterward rinsed.--Fr. 40,647.

The free acid and acid salts are used with acid washing agents, e.g., oleylmethylaminoethanesulfonic acid, to make mothproofing detergent compositions.--U. S. 2,082,188; 2,130,435.

SELENIOUS ACID

Soap to which selenious acid or its salts has been added possesses mothproofing properties.--Fr. 40,647.

Selenious acid and its salts are used with acid washing agents to make mothproofing detergent compositions.--U. S. 2,082,188; 2,130,435.

Selenious acid or a salt thereof is used for mothproofing wool.-
Aust. 123,423; Brit. 340,318; Fr. 700,870; Ger. 524,590.

For example wool is treated with a solution of 1.5 parts by weight of selenious acid in 100 parts by weight of an organic solvent in such a manner that after evaporation of the solvent 1 percent of selenious acid remains on the wool.-U. S. 1,903,864.

A mothproofing soap is made by mixing 10 parts selenious acid with 90 parts of an acid soap.-Brit. 366,090; Ger. 541,279.

SELENIOUS ACID, n-BUTYLAMINE SALT

SELENIOUS ACID, CYCLOHEXYLAMINE SALT

Brit. 340,318; U. S. 1,903,864.

SELENIOUS ACID, ETHYLENE DIAMINE SALT

Wool is impregnated with an aqueous solution containing 1 to 1.5 grams per liter of selenious acid ethylene diamine. After some time it is rinsed, centrifuged, and dried. The wool is thus rendered mothproof.-Aust. 123,423; Brit. 340,138; Fr. 700,870; Ger. 524,590; U. S. 1,903,864.

SELENIUM COMPOUNDS

Soap to which selenium compounds have been added possesses mothproofing properties.-Fr. 40,647.

Selenium compounds, e.g. selenious acid, selenic acid, sodium selenate, ammonium selenite, or selenious acid ethylene diamine, are employed to protect wool, fur, feathers, hair, etc. from moths or other textile pests. The compounds soluble in organic solvents can be applied in solution in alcohols, acetone, cyclohexanone, or the like. The water soluble compounds can be applied in aqueous solution, to which organic or inorganic salts or acids or wetting agents may be added.-Aust. 123,423; Fr. 700,870; Ger. 524,590; U. S. 1,903,864.

SELENIUM TETRACHLORIDE LINOLEIC ACID COMPOUND

The product of the reaction of linoleic acid and selenium tetrachloride (made according to Ger. 276,976) is used for mothproofing wool.-Fr. 700,870.

SILICIC ACID, COLLOIDAL

Brit. 173,536; Fr. 518,821; Ger. 347,721.

SILK, ARTIFICIAL

Wool is protected from attack by moths by impregnating it with solutions of artificial silk; for example: (1) The wool is treated with a 1 percent solution of collodion, dried, and the collodion denitrated with a 5 percent solution of sodium hydrosulfide; (2) The wool is impregnated with an approximately 1 percent solution of cellulose in ammoniacal copper hydroxide and the cellulose subsequently precipitated on the fibers by treatment with acid; (3) The wool is first treated with sodium cellulose xanthate and the viscose then precipitated with acid; (4) The wool is soaked in a 1 percent acetone solution of cellulose triacetate, pressed out, and dried.-Ger. 576,411.

SOAP

A solution of 1 pound of laundry soap to 10 gallons of water when sprayed on moth eggs on flannel killed most of the eggs; also tests indicated that spraying or washing clothing with strong soap solution will free it from larvae and eggs of the clothes moth.-Scott, Abbott, and Dudley (38).

"Clothing washed with a strong solution of neutral laundry soap will be freed from clothes moth larvae and eggs".-Back (5).

Soap solution is a remedy against clothes moths.-Mullin (24,25).

Soap is an ingredient of mothproofing compositions described in Brit. 253,993; 325,910; 366,090; 463,725; Can. 261,810; Fr. 545,930; 699,410; 717,976; Ger. 416,706; 528,704; 541,279; 581,990; U. S. 1,558,122; 1,799,047; 1,901,960.

SOAP, ALKALINE EARTH

Brit. 403,957.

SOAP, ALUMINUM

Animal and vegetable fibers are rendered waterproof and insect-proof by treating them with an alkaine liquid, passing the wet fibers through a solution of a water-soluble soap and thereafter passing them through a solution of an aluminum salt.-Brit. 403,957.

SOAP, BARIUM

SOAP, CADMIUM

SOAP, CALCIUM

SOAP, CHROMIUM

Brit. 403,957.

SOAP, CURD

A solution of curd soap is used to emulsify a mixture of oil of cloves, bay oil, and pyrethrum extract. The resulting bath is used to impregnate clothing which thus acquires the property of protecting the wearer from the stings of gnats.-Ger. 557,760.

SOAP, GREEN

Arsenic, green soap, and common salt are mixed in the ratio 9:12:4 and dissolved in about $2/3$ liter of water. This solution is mixed with about $1/3$ liter of methylated spirit and the mixture applied to the leather side of fur by means of a brush or the like. Moths and their eggs in the hair are destroyed and mildew is prevented.-Brit. 368,179.

SOAP, MAGNESIUM

SOAP, MERCURY

Brit. 403,957.

SOAP, OLIVE OIL

Ger. 557,760.

SOAP, STRONTIUM

SOAP, THALLIUM

SOAP, THORIUM

SOAP, TITANIUM

SOAP, URANIUM

SOAP, ZINC

SOAP, ZIRCONIUM

Brit. 403,957.

SOAPS, FATTY ACID

SOAPS, NAPHTHENIC ACID

SOAPS, SULFONIC ACID

Suitable for emulsifying aluminum naphthenate in water.--U. S.

2,078,458.

SODIUM ACETATE

Sodium acetate may be used as a salting out agent in emulsifying a butyl alcohol solution of copper oleate in water.--Brit. 367,913.

SODIUM ALUMINATE

A weak solution of this is used to harden rubber latex, an ingredient of an adhesive mothproofing composition.--Brit. 463,725.

SODIUM ALUMINUM FLUOSILICATE

U. S. 1,901,960.

SODIUM ANTIMONY FLUORIDE

Animal fibers are mothproofed by a double salt prepared by evaporation of a solution containing about four parts by weight of chromium fluoride and one part by weight of sodium antimony fluoride.-Brit. 454,458; Fr. 47,613, 2nd addition to 774,692.

SODIUM ARSENITE

An ingredient of a drenching solution for hides.-Ger. 595,849.

A covering for fabrics is impregnated with a solution containing about 4 percent arsenic and made by dissolving 1 part of arsenic trioxide and 3 parts of sodium carbonate in water.-U. S. 2,017,159.

SODIUM BENZOATE

Ineffective.-Jackson and Wassell (18).

SODIUM BICARBONATE

Sodium bicarbonate, dusted, proved ineffective against clothes moth larvae.-Scott, Abbott and Dudley (38); also Back (5) and Mullin (24,25).

Ineffective for mothproofing.-Jackson and Wassell (18).

SODIUM BISULFATE

An ingredient of a mothproofing solution.-Brit. 333,584.

SODIUM BORATE

An ingredient of a mothproofing and fireproofing solution.-U. S. 1,085,783.

Borax may be added to fluosulfonates for preserving porous organic materials.-U. S. 1,448,276.

SODIUM CARBONATE

Sodium carbonate, dusted, proved ineffective against clothes moth larvae.-Scott, Abbott, and Dudley (38); Also Back (5), and Mullin (24).

Sodium carbonate is an ingredient of mothproofing solutions described in U. S. 387,579.

Ineffective for mothproofing.--Jackson and Wassell (18).

Used to solubilize casein for use in an adhesive mothproofing composition.--Brit. 463,725.

Used to make a solution of sodium arsenite.--U. S. 1,558,122; 2,017,159.

SODIUM CHLORIDE

Salt, dusted, is worthless for clothes moth control.--Back (5); also Mullin (24).

Sodium chloride is one of the ingredients used in the mothproofing solutions described in Brit. 368,179; Ger. 347,849; 595,849; U. S. 1,019,909; 1,448,276; 2,091,075.

Sodium chloride is used as a salting out agent in emulsifying copper oleate in water according to the following recipe: 15 grams of copper oleate are dissolved in 250 cc. of dry butyl alcohol; this solution is then mixed with 300 grams of Turkey red oil and the mixture emulsified in 5 liters of water containing 200 grams of sodium chloride in solution.--Brit. 367,913.

SODIUM FLUOBORATE

Animal fibers are mothproofed by the application of this together with a lubricant used in one of the manufacturing steps.--Brit. 453,053.

SODIUM FLUORIDE

Sodium fluoride when used as a dust proved effective against moth larvae.--Scott, Abbott, and Dudley (38).

Sodium fluoride is ineffective for mothproofing.--Jackson and Wassell (18).

Sodium fluoride is of value in mothproofing.-White, Fulton, and Cranor (42).

Water solutions of aluminum silicofluoride and sodium fluoride when used to drench fabrics thoroughly are of value.-Back and Cotton (8).

The affinity of sodium and other neutral fluorides for undyed wool has been determined by Minaeff and Wright (23).

Peterman's Moth Food, which contains about 47 percent sodium fluoride and about 48 percent flour is of no practical value in mothproofing.-Back and Cotton (6).

Mullin (24,25) listed sodium fluoride or other fluorides as both preventive and remedial against clothes moths.

Sodium fluoride is an ingredient of mothproofing compositions described in the following patents:

Brit. 235,914	236,218
235,915	313,043
Fr. 577,340	
U. S. 1,085,783	1,634,791
1,448,276	1,634,792
1,494,085	1,682,975
1,515,182	1,732,240
1,594,631	1,789,565
1,634,790	1,901,960

Used with lime, casein, Canada balsam and isopropyl alcohol to make a mothproofing adhesive.-Brit. 463,725.

Mentioned as a known mothproofing agent.-U. S. 1,955,891.

A mothproofing composition comprises a mixture of sodium fluoride, 48 percent; sodium silicate, 7 percent; sodium chloride, 34 percent; mono sodium phosphate, 10 percent; "Nekal", 1 percent.-U. S. 2,091,075.

SODIUM FLUOSILICATE

An ingredient of the mothproofing compositions described in the following patents:

is, anti-10 10 10	Brit. 235,914	Fr. 40,647	Ger. 507,097	U. S. 1,634,790
205,000	235,915		581,990	1,634,791
	285,825			1,634,793
1000 1000 1000	313,043			1,634,794
1000 1000 1000	366,090			1,901,960
				2,082,188
				2,130,435

Mentioned as a known mothproofing agent.-U. S. 1,955,891;
2,127,252; also by Sachs (36) and White, Fulton, and Cranor (42).

The affinity of woolen yarn for fluosilicates, especially the sodium compound, has been determined.-Minaeff and Wright (23).

SODIUM FLUOSULFONATE

Used for preserving textile fabrics and other porous organic materials.-U. S. 1,448,276.

SODIUM GLYCOCHOLATE

A mothproofing solution contains about 0.5 percent sodium fluoride and about 0.2 percent of sodium taurocholate and sodium glycocholate.-U. S. 1,732,240.

SODIUM HYDROGEN FLUORIDE

Fr. 646,479; Ger. 468,914.

SODIUM HYDROGEN SULFATE

An insecticide consists of an alkaloidal extract of lupins, an extract of quillai bark and sodium bisulfate.-Brit. 230,203.

SODIUM HYDROSULFIDE

Wool is rendered mothproof by treating it with a 1 percent solution of collodion, drying, and denitrating the collodion with a 5 percent solution of sodium hydrosulfide.-Ger. 576,411.

SODIUM MOLYBDATE

An ingredient of a mothproofing and fireproofing solution.-U. S. 1,085,783.

SODIUM NAPHTHENATE

Used to emulsify aluminum naphthenate in water.-U. S. 2,078,458.

SODIUM OLEATE

A mothproofing composition contains approximately 0.1 percent sodium oleate, 0.005 percent gelatin, 1 percent soluble fluoride, and 0.004 percent organic acid, preferably citric.-Brit. 236,218; U. S. 1,634,792.

SODIUM PHOSPHATE

Sodium phosphate alone or mixed with ammonium molybdate and nitric acid in water was found to be ineffective.-Jackson and Wassell (18).

100 parts of wool are placed in a cold bath consisting of 2 parts ammonium molybdate and 10 parts nitric acid, and while the goods are continually agitated a dilute solution of 1 part sodium phosphate is gradually added. The goods are allowed to remain for a few hours and are then rinsed and dried.-Brit. 173,536; Ger. 347,720.

Added to a mothproofing solution to give it fireproofing properties.-

U. S. 1,085,783.

A mothproofing composition comprises a mixture of sodium fluoride, 48 percent; sodium silicate, 7 percent; sodium chloride, 34 percent; mono (or tri-) sodium phosphate, 10 percent; and "Nekal", 1 percent.-

U. S. 2,091,075.

Trisodium phosphate is used to solubilize casein, a constituent of an adhesive mothproofing composition.-Brit. 463,725.

SODIUM POLYSULFIDE

Used as a vulcanizing agent with rubber latex, an ingredient of an adhesive mothproofing composition.-Brit. 463,725.

SODIUM RESINATE

The following mixture is boiled into a soap for insect-proofing paper and fabrics: Powdered resin, 3 parts; soda crystals, 3 parts; naphthalene, 2 parts; and water, 100 parts. Alum may be added, also a decoction of sweet flag root.-Brit. 13,071 of 1909.

SODIUM SELENATE

Brit. 453,053; U. S. 1,903,864.

A mothproofing soap solution is obtained by mixing 10 parts sodium selenate with an aqueous solution of 90 parts of soap.-Ger. 541,279.

SODIUM SELENITE

A mothproofing composition consists of 90 parts of soap powder mixed intimately with 10 parts of sodium selenite.-Brit. 366,090.

SODIUM SILICATE

Added to a mothproofing solution to give it fireproofing properties.-

U. S. 1,085,783.

Used to solubilize casein, a constituent of an adhesive mothproofing composition.--Brit. 463,725.

Sodium silicate of the formula $\text{Na}_2\text{O} \cdot 0.2\text{SiO}_2$ is an ingredient of the mothproofing composition described in U. S. 2,091,075.

SODIUM STEARATE

Woolens are mothproofed by treating with a 1.5 percent solution of sodium stearate, drying and passing the fabric through a warm 0.25 percent solution of cerium chloride.--Brit. 247,242.

SODIUM SULFATE

The following combinations were ineffective as mothproofing agents: Glauber's salt with hydrofluoric acid and sulfuric acid in water; Glauber's salt, potassium silicate and sulfuric acid in water; Glauber's salt with stannic acid and sulfuric acid in water; and Glauber's salt with tungstic acid and sulfuric acid in water. Sodium sulfate was also ineffective as a moth repellent.--Jackson and Wassell (18).

Sodium sulfate is mentioned as an ingredient of mothproofing solutions in the following patents: Brit. 173,536; 230,203; 235,915; 313,043; 333,583 and 367,913; Can. 247,378; Fr. 518,821; Ger. 344,266; 346,596; 346,597; 346,598; 347,720; 347,721; 347,849; and 421,100; Swed. 59,841; U. S. 1,448,276; 1,594,631; 1,610,167; 1,634,790; 1,682,975; 1,789,565; 1,903,864; and 2,015,533. For example, 100 parts of wool are boiled for one hour in a bath consisting of 2 parts hydrofluoric acid, 10 parts Glauber's salt, and 2 parts concentrated sulfuric acid, after which the wool is rinsed and well dried.

SODIUM TAUROCHOLATE

An aqueous solution of sodium fluoride, and a bile salt, such as sodium taurocholate is employed for mothproofing purposes.--U. S. 1,732,240.

SODIUM TUNGSTATE

Added to a mothproofing solution to give it fireproofing properties.--U. S. 1,085,783.

SOYBEAN, PROTEIN OF

A constituent of an adhesive mothproofing composition.--Brit. 463,725.

SPARTEINE

Ger. 421,100.

SPERMACE TI WAX

A solid mixture of this and cyclohexene oxide is used to fumigate clothes moths.--U. S. 2,101,587.

SPINDEL TREE OIL

A solvent for naphthalene derivatives and other insecticides used to impregnate leather.--Ger. 615,759.

STANNIC ACID

100 parts of wool are heated to boiling for one hour in a solution of 3 parts of colloidal stannic acid, after which the bath is acidified with 3 parts of concentrated sulfuric acid, and 10 parts of Glauber's salt are added. The wool thus treated is allowed to cool in the bath and is then rinsed and dried.--Brit. 173,536; Fr. 518,821; Ger. 347,721.

Stannic acid with Glauber's salt and sulfuric acid in water was ineffective.--Jackson and Wassell (18).

STARCH

A constituent of an adhesive mothproofing composition.--Brit. 463,725.

Used as a diluent for:

Aromatic hydroxy mothproofing compounds.--Brit. 495,639; 497,214.

Ethers or esters of aromatic hydroxy compounds.--Brit. 495,761.

Halogenated phenols.--Brit. 474,600.

STEARAMIDE, N-(3,4-DICHLOROBENZENESULFONYL)-

A mothproofing solution consists of trichloroethylene containing a mixture of 1 part of 3,4-dichlorobenzenesulfostearic amide in 1.5 parts of diethylbutylglycol phosphate.--Brit. 407,356; U. S. 1,955,207.

STEARANILIDE

Added to a naphtha solution of 3-chloro-4-hydroxy-diphenyl to prevent crystallization of the active ingredient and dusting off from a fabric to which the insecticide is applied.--U. S. 1,977,412.

STEARIC ACID

The stearates of cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium, and thallium are claimed for mothproofing purposes in Brit. 247,242; Fr. 603,552.

Stearic acid is one of the preferred fatty acids used to combine with quinoidine in preparing a mothproofing solution.--U. S. 1,694,219.

STEARIC ACID, NEUTRAL ALKALI SALTS

An example of a neutral washing agent used in admixture with mothproofing agents, such as salts of quaternary phosphonium bases.--U. S. 2,130,435.

STEARIC ACID, beta-DIETHYLAMINOETHYLMETHACRYLATE ESTER

The stearate of beta-diethylaminoethyl methacrylate is a mothicide fixative. Solutions in trichloroethylene were made up containing 0.2 percent of the above stearate and 0.5 percent of "Lorol" thiocyanate containing dye. Woolen flannel impregnated in these solutions at about 40° C. for one minute, wrung out, and dried at 60-65° C. were found to be fairly resistant to the washing tests but not especially resistant to the dry-cleaning tests as determined qualitatively by color fading.-
U. S. 2,098,942.

STEARIC ACID, METHYLAMINE-PHENOL-FORMALDEHYDE RESIN ESTER

U. S. 2,098,942.

STEARIC ACID, DIHYDROXY-

Rare earth salts (cerium, lanthanum, didymium, thorium, zirconium, uranium, titanium, and thallium) are claimed in Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

STEAROPHENONE, alpha-(p-TETRAMETHYLAMMONIUM PHENYLSULFONYL) SULFATE

Swiss 203,592.

STIBINE, DIPHENYL-, ACETATE

Felt is mothproofed by treating it with a 1 percent solution of diphenylstibine acetate in benzine and drying.-Brit. 303,092;
U. S. 1,766,819.

STIBINE, DIPHENYLETHYL-

Brit. 303,092; Ger. 485,646; U. S. 1,766,819.

STIBINE, TRIBENZYL-

U. S. 1,766,819.

STIBINE, TRIBROMOPHENYL-

Brit. 303,092; Ger. 485,646; U. S. 1,766,819.

STIBINE, TRIETHYL-, DICHLORIDE

STIBINE, TRIMETHYL-, DIBROMIDE

STIBINE, TRIMETHYL-, DICHLORIDE

STIBINE, TRIMETHYL-, SULFATE

STIBINE, TRI-1-NAPHTHYL-

Brit. 303,092; Ger. 485,646; U. S. 1,766,819.

STIBINE, TRIPHENYL-

Woolen material is immersed in a 3 percent solution of triphenylstibine in benzine, withdrawn, centrifuged and the solvent evaporated. The triphenylstibine is ultimately converted into triphenylstibine oxide by the oxygen of the air, or oxidation may be effected by treatment with chlorine, hydrogen peroxide, or bleaching powder. The triphenylstibine may be dusted on the goods in powder form.--Brit. 303,092; Ger. 485,646; U. S. 1,766,819.

Animal fibers are mothproofed by the application of triphenylstibine together with a lubricant used in one of the manufacturing steps.--Brit. 453,053.

STIBINE, TRI-o-TOLYL-

STIBINE, TRI-p-TOLYL-

Skins and furs are mothproofed by spraying them with a 3-percent solution of a tri-tolylstibine (e.g., the ortho form) in benzene.--Brit. 303,092; Ger. 485,646; U. S. 1,766,819.

STIBINE OXIDE, DIPHENYL-

Brit. 303,092.

STIBINE OXIDE, PHENYL-

U. S. 1,766,819.

STIBINE OXIDE, TRIPHENYL-

Woolen material is mothproofed by immersing it in a 3 percent solution of triphenylstibine in benzene. Exposure to the air or oxidation with chlorine, bleaching powder, or hydrogen peroxide converts the triphenylstibine into triphenylstibine oxide, which possesses the great advantage of being insoluble in the customary solvents used in washing and cleaning.-Brit. 303,092; Ger. 485,646; U. S. 1,766,819.

STIBINIC ACID, PHENYL-

U. S. 1,766,819.

STILBENE, SULFONIC AND CARBOXYLIC ACID DERIVATIVES

Ger. 344,266.

STRONTIUM ACETATE

Fabrics are mothproofed by treatment with an alcoholic solution of strontium acetate.-Brit. 365,233; Fr. 700,840; Ger. 515,965; U. S. 1,923,223.

STRONTIUM CHLORIDE

Goods impregnated with 1 percent strontium chloride (anhydrous salt) are effectively mothproofed.-Brit. 365,233; Fr. 707,840; Ger. 515,956.

Wool is treated with an aqueous solution containing 0.4 percent of strontium chloride ($\text{SrCl}_2 \cdot 6\text{H}_2\text{O}$) in such a manner that after centrifuging the wool, 1 percent of the strontium chloride calculated on the weight of the wool remains, whereupon the wool is permanently protected against attack by moths.-U. S. 1,923,223.

Animal fibers are mothproofed by the application of strontium chloride together with a lubricant used in one of the manufacturing steps.-Brit. 453,053.

STRONTIUM COMPOUNDS

Strontium compounds are better than barium compounds for mothproofing goods. Examples are the nitrate, chloride, oleate, acetate, and salicylate. In general about 0.1 to 1 percent of strontium must be incorporated in the material.-Brit. 365,233; Fr. 707,840; Ger. 515,958; U. S. 1,923,223.

STRONTIUM FLUORIDE

Woolen material is soaked in a 1 percent solution of calcium selenate, centrifuged, and then soaked in a saturated solution of strontium fluoride. As a result calcium fluoride and strontium selenate are incorporated with the material.-U. S. 2,119,458.

STRONTIUM FLUOSILICATE

May be used with strontium benzene sulfonate.-U. S. 2,291,473.

STRONTIUM NITRATE

Goods are mothproofed by treating them with an aqueous solution of strontium nitrate in such a manner that the material retains from 0.5 to 0.7 percent of its weight of the strontium salt.-Brit. 365,233; Fr. 707,840; Ger. 515,956; U. S. 1,923,223.

STRONTIUM OLEATE

STRONTIUM SALICYLATE

A benzine solution of strontium oleate or an alcoholic solution of strontium salicylate is used for mothproofing furs and woolen goods.-Brit. 365,233; Fr. 707,840; Ger. 515,956; U. S. 1,923,223.

STRONTIUM SELENATE

Strontium selenate together with calcium fluoride is precipitated upon cloth by soaking the cloth first in a solution of calcium selenate and then in a solution of strontium fluoride.-U. S. 2,119,458.

STRONTIUM SULFONATES

U. S. 1,923,223.

STRYCHNINE

Strychnine is added to a drenching solution for hides, to serve as a mothproofing agent.-Ger. 595,849.

STRYCHNOS IGNATII

STRYCHNOS NUX VOMICA

Brit. 327,009.

SULFANILIC ACIDS

These compounds as well as their alkylated and benzoylated derivatives are claimed for mothproofing purposes in Ger. 344,266.

SULFATES, ALKALI METAL

Ingredients of mothproofing solutions.-Brit. 235,914 and 235,915.

SULFIDE, BIS(BENZOTHAZOLYLTHIOETHOXYETHYL)

U. S. 2,107,366.

SULFIDE, BIS(3-BENZYL-4-HYDROXYPHENYL)

Fabrics impregnated with 2 percent of this compound are not attacked by mildew and are rendered mothproof.-Brit. 349,004.

SULFIDE, BIS(p-BENZYLPHENOXYETHOXYETHYL)

U. S. 2,107,366.

SULFIDE, BIS(p-CHLOROPHENYL)

Five parts of 4,4'-dichloro-diphenyl-sulfide are dissolved in 995 parts of acetone, and furs, feathers, or wool are treated by dipping, centrifuged and dried. The material thus treated is moth-proof. Solutions with only 2 g. per liter suffice to obtain an effect fast to washing.-Brit. 502,320; Swiss 203,306.

SULFIDE, BIS(3,5-DIBROMO-2-HYDROXY)

Fabrics impregnated with 2 percent of this compound are not attacked by mildew and are rendered mothproof.-Brit. 349,004.

SULFIDE, BIS-(p-tert-BUTYLPHENOXYISOPROPOXYISOPROPYL)

U. S. 2,107,366.

SULFIDE, BIS(5-CHLORO-2-HYDROXYPHENYL)

100 parts by weight of wool, well wetted, are impregnated in a cold or heated bath of about 1:20 of the sodium salt of bis-(2-hydroxy-5-chloro-phenyl)-sulfide. The bath is exhausted in a short time and the substance fixed on the fibre. The wool is rinsed or acidified in the customary manner and dried.-Brit. 349,004.

SULFIDE, BIS(p-CYCLOHEXYLPHENOXYETHOXYETHYL)

SULFIDE, BIS(2,4-DICHLOROPHENOXYETHOXYETHYL)

U. S. 2,107,366.

SULFIDE, BIS(HYDROXYARYL)

Brit. 349,004.

SULFIDE, BIS(o-METHOXYPHENOXYETHOXYETHYL)

SULFIDE, BIS(2-NAPHTHOXYETHOXYETHYL)

SULFIDE, BIS(PHENOXYETHOXYETHOXYETHYL)

SULFIDE, BIS(PHENOXYETHOXYETHYL)

SULFIDE, BIS(p-PHENYLPHENOXYETHOXYETHYL)

SULFIDE, BIS(PHENYLTHIOETHOXYETHYL)

SULFIDE, BIS(p-alpha, alpha, gamma, gamma-TETRAMETHYLBUTYLPHENOXYETHOXY-ETHYL)

SULFIDE, BIS(TETRAHYDROFURFUROXYETHOXYETHYL)

SULFIDE, BIS(TOLOXYETHOXYETHOXYETHYL)

U. S. 2,107,366.

SULFIDE, DECYL 3,5-DIBROMO-2-HYDROXY-BENZYL

Brit. 497,214; Fr. 48,395, 1st addition to 802,508.

SULFIDES, ALKYLENE

U. S. 2,202,169.

SULFIDES, POLY-, BIS(HYDROXYARYL)

Brit. 349,004.

SULFINIC ACIDS

Salts of quaternary phosphonium bases with sulfinic acid are used for mothproofing.-Ger. 506,987.

SULFOCHLORIDES

Chlorides of nonvolatile or slightly volatile sulfonic acids with or without solvents, for example, sulfochlorides of condensation products of aldehydes or sulfur chloride may be used for mothproofing.-Ger. 449,126.

SULFOFLUORIDES

Ger. 450,418.

SULFONAMIDES, ARYL-

Aryl sulfonamides protect wool, feathers, hair, etc. against moths and other textile pests such as Anthrenus and Attagenus. These compounds are insoluble in the usual organic solvents, such as benzine and carbon tetrachloride, but give mobile mixtures or solutions in even small quantities of phosphoric acid esters, e.g., trimethyl phosphate, triethyl phosphate, dibutyl phosphate, diethylbutylglycol phosphate. These solutions are easily diluted with benzine, carbon tetrachloride or trichlorethylene and may be applied to textile products in this form.-
Brit. 407,356; Fr. 42,266; Ger. 581,990; U. S. 1,962,276.

Aryl sulfonamides, their derivatives and substitution products are used mixed with phosphoric acid ester to mothproof wool. Examples are: 3,4-dichlorobenzenesulfomethylamide, 4-chlorobenzenesulfomethylamide, and 3,4-dichlorobenzenesulfobutylamide.-Ger. 558,509; U. S. 1,955,207; 2,082,188; 2,130,435; 2,184,951.

SULFONATED FATTY ACIDS

Used as wetting agents in mothproofing solutions.-Brit. 285,825; Fr. 654,712.

SULFONATED OIL

Used as a softening agent and also as a solvent for an oleoresin in an adhesive mothproofing composition.-Brit. 463,725.

SULFONE, p-MOXYPHENYL p-CHLOROPHENYL

SULFONE, BIS(p-BROMOPHENYL)

SULFONE, BIS(4-CHLORO-3-HYDROXYPHENYL)

SULFONE. BIS(p-CHLOROPHENYL)

Brit. 484,448.

SULFONE, BIS(2,5-DICHLOROPHENYLSULFONYL)

Fr. 788,285.

SULFONE, BIS(p-FLUOPHENYL)

SULFONE, p-BROMOPHENYL p-CHLOROPHENYL

SULFONE, p-BUTOXYPHENYL p-CHLOROPHENYL

SULFONE, p-CHLOROPHENYL DICHLOROBENZYL

SULFONE, p-CHLOROPHENYL 2,4-DICHLOROPHENYL

SULFONE, p-CHLOROPHENYL 3,4-DICHLOROPHENYL

SULFONE, p-CHLOROPHENYL DODECYL

SULFONE, p-CHLOROPHENYL p-ETHOXYPHENYL

SULFONE, p-CHLOROPHENYL p-METHOXYPHENYL

SULFONE, p-CHLOROPHENYL METHYL

SULFONE, p-CHLOROPHENYL p-PHENOXYPHENYL

SULFONE, p-CHLOROPHENYL PHENYL

SULFONE, 2,4-DICHLOROPHENYL 3,4-DICHLOROPHENYL

SULFONE, 3,4-DICHLOROPHENYL PHENYL

Brit. 484,448.

SULFONES

Referred to as known insecticides.--Swiss 199,985.

SULFONES, AMINOARYL-

Swiss 200,667.

SULFONIC ACIDS

Salts of sulfonic acids are mentioned as being used for mothproofing purposes in Ger. 344,266; 430,186.

Aromatic sulfonic acids or their salts or derivatives are used as wetting agents in mothproofing media. For example, a solution of sodium fluosilicate, 4 grains per liter, and isopropylnaphthalene sodium sulfonate is sprayed on plush upholstery of furniture.--Brit. 285,825; Fr. 654,712.

Salts of quaternary phosphonium bases with sulfonic acids are used for mothproofing.--Ger. 506,987.

A sulfonated fatty acid, for example, Turkey red oil, is used with an odorous insecticidal material in impregnating wood to form an artificial cedar board or "moth wood".--Ger. 470,458.

Aromatic sulfonic acids or their salts which contain one or more aliphatic groups each containing 3 or more carbon atoms (such as propyl, isopropyl, butyl, and isobutyl) are used as wetting agents in mothproofing wool.--Ger. 507,097.

Sulfonic acids and salts thereof are mentioned as examples of adhesives and fillers to be used with aromatic thiocyanates as mothproofing agents and aphicides.--Brit. 325,910.

Certain sulfonic acids may be employed in a soluble fluoride-mothproofing liquid to lower the surface tension and facilitate the penetration of the liquid into the fibers to which it is applied.--U. S. 1,901,960.

SULFONIC ACIDS, CONDENSATION PRODUCTS OF

Brit. 333,561; Ger. 534,338.

Aqueous solutions of these compounds are used for mothproofing textiles.--Brit. 492,938.

SULFONIC ACIDS, SUBSTITUTED ARYL, ESTERS

A process for rendering materials mothproof consists in treating the material with substituted aryl sulfonic acid esters of the general formula $R_1-SO_2-OR_2$ wherein R_1 means a halogen substituted benzene radical and R_2 an unsubstituted aryl radical or an aryl radical substituted by halogen or alkyl groups.-Brit. 491,434.

SULFONIUM COMPOUNDS

Examples are:

3,6-Diamyl-S-methyl-ortho-phenylene-oxide-sulfonium metho-sulfate.

2,7-Dichloro-S-methyl-thianthrene-sulfonium metho-sulfate.

1,3-Dichloro-6-methyl-S-methyl-ortho-phenylene-oxide-sulfonium metho-sulfate.

3,6-Dimethyl-N-methyl-S-methyldiphenylamine-sulfonium metho-sulfate.

3,6-Dimethyl-S-methyl-ortho-phenylene-oxide-sulfonium metho-sulfate.

2,6-Dimethyl-S-methyl-thianthrene-sulfonium metho-sulfate.

4-Methyl-6-oxy-N-methyl-S-methyldiphenylamine-sulfonium metho-sulfate.

N-Methyl-S-phenyl-diphenylamine sulfonium chloride.

S-Methyl-thioxanthone-sulfonium-metho-sulfate.

S-Phenyl-di-phenylene-oxide-sulfonium chloride.

Tri-para-oxy-triphenyl-sulfonium chloride.

S-Phenyl-thianthrene-sulfonium chloride. Furs, feathers or wool are treated at 95° C. with a neutral aqueous solution of S-phenyl-thianthrene-sulfonium chloride of 3 percent strength containing Glauber's salt and dried. The goods are protected against moths in a satisfactory manner. Even more dilute solutions have an appreciable toxic action on moth larvae.-Brit. 487,804.

SULFONIUM COMPOUNDS, TRIPHENYL-----CHLORIDE

Three parts of triphenylsulfonium chloride are dissolved in 97 parts of alcohol or water. Furs, feathers, wool or other textile materials of animal origin are treated by immersion in the solution, or in the case of an aqueous solution by absorption from a neutral bath containing Glauber's salt, at 95° C. and dried. The materials thus treated are protected against moths. Even more dilute solutions suffice to impart a satisfactory protection against attack by moths.-Brit. 487,804.

SULFONPHTHALEIN, CHLOROPHENOL-

Brit. 337,832.

SULFONYL FLUORIDES, ALKYL-

Alkyl sulfonyl fluorides in which the alkyl group contains from 1 to 4 carbon atoms are used for combating moths and carpet beetles.-

U. S. 2,114,577.

SULFOXIDE, BIS(p-BROMOPHENYL)

SULFOXIDE, BIS(p-CHLOROPHENYL)

SULFOXIDE, BIS(2,4-DICHLOROPHENYL)

SULFOXIDE, BIS(p-FLUOROPHENYL)

Brit. 484,448.

SULFOXIDES

Referred to as known insecticides.-Swiss 199,985.

SULFUR

Sulfur sprinkled on infested flannel had no value in preventing the hatching of clothesmoth eggs.-Scott, Abbott, and Dudley (38), also Back (5) and Mullin (24).

A mixture of sulfur with naphthalene, camphor, or beta-naphthol is melted and used in repelling moths.-Ger. 411,345.

Used as a vulcanizing agent with rubber latex, an ingredient of an adhesive mothproofing composition.-Brit. 463,725.

Sulfur is sprinkled over a garment and heated to about 125° C. The liquid sulfur is absorbed and on cooling becomes a finely powdered sulfur which protects the wearer of the garment against attack by insects and mites, especially the red bug or chigger.-U. S. 1,688,597.

SULFUR BENTONITE

Made by grinding a mixture of 150 parts of sulfur, 50 parts of bentonite and 400 parts of water. The suspension may be mixed with cedar sawdust and the mixture dried and molded to make tablets or sheets which may be employed as moth eradicators.-U. S. 1,795,364.

SULFUR CHLORIDE

Sulfur monochloride is used to treat ortho-hydroxy-carboxylic acids to prepare mothproofing compounds.-Brit. 274,425.

SULFUR COMPOUNDS

Used as a vulcanizing agent with rubber latex, an ingredient of an adhesive mothproofing composition.-Brit. 463,725.

SULFUR DIOXIDE

Mentioned as a known fabric protecting agent.-U. S. 2,091,075.

SULFURIC ACID

A mothproofing drenching solution for hides contains: cooking salt, 11 percent; sulfuric acid 2-3 percent; nicotine 0.05-0.005 percent; oxalic acid 1-0.8 percent; water 86-85.2 percent.-Ger. 595,849.

Sulfuric acid is one of the ingredients of mothproofing solutions mentioned in the following patents: Brit. 173,536 and 324,962; Fr. 518,821; Ger. 344,266; 346,596; 346,598; 347,720; 347,721; 347,722; and 347,849; U. S. 387,579; and 1,682,975. For example, 100 parts of wool are boiled for one hour in a bath containing 5 parts potassium silicate, 20 parts Glauber's salt, and 5 parts concentrated sulfuric acid, whereupon the wool is rinsed and dried.

Sulfuric acid is used with Eulan F for mothproofing wool.-Meckbach (21).

Sulfuric acid in combination with: aluminum fluoride, aluminum sulfate and ammonium fluoride in water; hydrofluoric acid and Glauber's salt in water; potassium silicate and Glauber's salt in water; stannic acid and Glauber's salt in water; and tungstic acid and Glauber's salt in water proved ineffective mothproofing agents.-Jackson and Wassell (18).

Salts of quaternary phosphonium bases with sulfuric acid are used for mothproofing.-Ger. 506,987.

Wool, 100 parts by weight, is mothproofed by placing it in a cold solution containing 500 parts by weight of water, 3 parts of aluminum fluoride, 1 part of ammonium fluoride, 3 parts of aluminum sulfate, and 3 parts of concentrated sulfuric acid. After 2 hours the materials are rinsed and dried.-Swed. 59,841.

TALC

Talc is a suitable diluent for use with:

Alkyl sulfofluorides.-U. S. 2,114,577.

Aromatic hydroxy compounds.-Brit. 495,639; 497,214.

p-Chlorobenzyl-triphenyl phosphonium chloride.-Brit. 312,163;
Fr. 675,413; Ger. 506,987.

Chlorocresotinic acid.-Aust. 114,458; Dutch 20,526; Fr.
636,434; Ger. 469,256.

4,6-Dichloro-2-isohexylphenol.-Fr. 802,508.

Ethers or esters of aromatic hydroxy compounds.-Brit. 495,761.

Halogenated phenols.-Brit. 474,600.

Methyl formate-magnesium chloride and other addition compounds.-Brit. 426,398.

Quaternary phosphonium salts.-U. S. 1,921,364.

Quillai.-Ger. 419,463.

TANNIN

Woolen fabrics are protected from moths by treating the cloth with a 3 percent solution of tannin and then placing it in a bath of antimony salt.-Brit. 160,039; Ger. 430,186.

Tannin is ineffective for mothproofing, also tannin in water, followed by tartar emetic in water; and tannin in acetone followed by antimony oleate in naphtha.--Jackson and Wassell (18).

TAPIOCA

A constituent of an adhesive mothproofing composition.--Brit. 463,725.

TAR

Used mixed with wax.--U. S. 1,591,902.

Tar is mentioned as a well-known moth repellent in Brit. 230,203; U. S. 1,610,167; and by Smith (39).

TAR SOAP

Swiss 142,372.

TARTAR

An ingredient of a mothproofing solution for hides.--Ger. 595,849.

TARTAR EMETIC

Wool is mothproofed by soaking it in a solution of tannic acid and then in a solution of tartar emetic.--Ger. 430,186; U. S. 1,480,289.

Used with brucine anilide acetate.--U. S. 2,015,533.

Ineffective.--Jackson and Wassell (18).

TARTARIC ACID

An ingredient of a mothproofing solution which contains a soluble fluoride.--Brit. 235,915; U. S. 1,634,791.

An ingredient of a mothproofing solution for hides.--Ger. 595,849.

TAUROCHOLIC ACID, SODIUM SALT

Employed in mothproofing compositions both for its insecticidal properties and for its power of reducing surface tension.--U. S. 1,901,960.

TEASEED OIL

A solvent for naphthalene derivatives and other insecticides used to impregnate leather.-Ger. 615,759.

TEREPHTHALIC ACID, SULFO-, AMYL ESTER

Fr. 713,082 and 735,959.

TERPENES

Used in making an artificial cedar board.-Ger. 470,458.

TETRALDON

Ineffective.-Jackson and Wassell (18).

TETRALIN

Blocks of gypsum are impregnated with tetralin for use against clothes moths.-Ger. 409,510.

TETRONIC ACID

Brit. 478,398; Ger. 665,214.

TETRONIC ACID, alpha-CARBOXYLIC ACID ESTER

Two parts of the methyl, ethyl, propyl, butyl, amyl or other ester of this acid in 98 parts of alcohol make a mothproofing solution; also a solution effective as a spray against flies and walking sticks.-Brit. 478,398; Ger. 665,214; U. S. 2,127,879.

THALLIUM SALTS

Thallium salts of the higher organic acids, specifically the ricinoleate, resinate, stearate, oleate, linoleate, and tungate, are used for mothproofing.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

Water soluble salts of thallium, such as the acetate or chloride, are used to precipitate casein in woollens for mothproofing purposes.-U. S. 1,688,717.

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a thallium salt.-U. S. 1,799,047.

THIANTHRENE

Twenty parts of thianthrene dissolved in 980 parts of alcohol effectually mothproofs furs, feathers and wool immersed in the solution and dried.-Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENE, 3-AMINO-6-METHYL-----HYDROCHLORIDE

THIANTHRENE, 2-CHLORO-

THIANTHRENE, 6-CHLORO-3-NITRO-

THIANTHRENE, 2,7-DICHLORO-

THIANTHRENE, 2,7-DICHLORO-3,6-DIMETHYL-

Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENE, 4,5-DICHLORO-1,8-DIMETHYL-

Twenty parts of dichlorodimethyl thianthrene dissolved in 980 parts of alcohol effectually mothproofs furs, feathers, and wool immersed in the solution and dried.-Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENE, 5,8-DICHLORO-3-NITRO-

THIANTHRENE, DIMETHOXY-

Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENE, 2,6-DIMETHYL-

Twenty parts of dimethyl-thianthrene dissolved in 980 parts of alcohol effectually mothproofs furs, feathers and wool immersed in the solution and dried.-Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENE, DINITRO-

THIANTHRENE, 8-METHOXY-5-METHYL-3-NITRO-

THIANTHRENE, 6-METHYL-3-NITRO-

THIANTHRENE, 2,3,6,7-TETRAMETHOXY-

THIANTHRENE, 1,3,5,7-TETRAMETHYL-

THIANTHRENE DICARBOXYLIC ACID

THIANTHRENE-S-DIOXIDE

THIANTHRENE DISULFIDE, 2,6-DIHYDROXY-3,7-DIMETHOXY-

THIANTHRENE-S-DISULFIDES

THIANTHRENE DISULFONE

Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENE-S-OXIDE

Twenty parts of thianthrene-S-oxide dissolved in 980 parts of alcohol effectually mothproofs furs, feathers and wool immersed in the solution and dried.-Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENE-S-OXIDE, 2,6-DIMETHYL-

THIANTHRENE-S-OXIDE, 2,3,6,7-TETRAMETHOXY-

Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIANTHRENES

Referred to as known insecticides.-Swiss 199,985.

THIANTHRENE SULFONE

THIANTHRENESULFONIC ACID

Brit. 467,701; Ger. 665,215; U. S. 2,123,572.

THIAZOLE, 2-AMINO-5-(p-CHLOROPHENYL)-

THIAZOLE, 2-AMINO-5-(HYDROXYPHENYL)-

Fr. 812,687.

THIAZOLE DERIVATIVES

For the preservation or protective treatment of wood, furs and the like, the material is treated with a non-dyeing thiazole derivative carrying a salt-forming group or with a salt, ester, ether or anhydro-compound of such a thiazole derivative.-Brit. 407,691.

2,4-THIAZOLEDIONE

Brit. 407,691.

THIAZOLES, AMINO-

THIAZOLESULFONIC ACID, 5-(CHLOROPHENYL)-2-PHENYLAMINO-

Fr. 812,687.

THIOAMIDES, SUBSTITUTED

Brit. 340,319; Fr. 39,013.

THIOCYANATES, AROMATIC

Aromatic compounds containing more than one thiocyno (SCN) group are used for combating moths.-Brit. 325,910; Ger. 501,135.

THIOCYANIC ACID

Salts of quaternary phosphonium bases with thiocyanic acid are used for mothproofing wool.-Ger. 506,987.

THIOCYANIC ACID, 4-CHLORO-6-METHOXY-m-XYLYLENE DIESTER

The preparation of this compound, intended for use as a moth-protecting agent, is described in Brit. 325,910.

THIOCYANIC ACID, 2,5-DIMETHOXY-p-XYLYLENE DIESTER

Brit. 325,910; Ger. 501,135.

THIOCYANIC ACID, 4-METHOXY-m-XYLYLENE DIESTER

Brit. 325,910.

THIOCYANIC ACID, 6-METHOXY-m-XYLYLENE DIESTER

Ger. 501,135.

THIOCYANIC ACID, DODECYL-

U. S. 2,098,942.

THIOPHOSPHORYL CHLORIDE, BIS(3,4-DICHLOROPHENOXY)-

Feathers treated for 30 to 45 minutes at 30-40° C. with an aqueous solution of 6 to 8 grams per liter of the quaternary ammonium compound obtainable from 1 mol of 3,4,3',4'-bis-(dichlorophenoxy) phosphorus sulfochloride, 1 mol of asymmetric diethylethylene diamine and 1 mol of 3,4-dichloro-benzyl chloride are rendered immune from attack by moth larvae.-Brit. 483,368.

THIURONIUM COMPOUND

Woolen material is thoroughly impregnated at 20-30° C. with a 0.2 percent aqueous or alcoholic solution of the thiuronium salt obtainable from 1 mol of phenyl-thiourea and 1 mol of ethylene bromide in such a manner that the material remains just covered by the solution. After half an hour the material is centrifuged, washed several times with water in the centrifuge, and dried, after which it is protected against attack by moths.-Brit. 346,039; Ger. 522,824.

THIURONIUM COMPOUND, 3,4-DICHLOROBENZYL-4-TOLYL-----CHLORIDE

Brit. 453,053.

THORIUM SALTS

The ricinoleate, resinate, stearate, oleate, linoleate, and tungate of thorium are claimed for mothproofing. For example woolen fabric is impregnated with a 1/2 percent solution of thorium oleate in white spirit.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

Thorium oleate was ineffective for mothproofing.--Jackson and Wassell (18).

Water soluble salts of thorium, such as the acetate or chloride, are used to precipitate casein on woolens for mothproofing purposes.--U. S. 1,688,717.

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a thorium salt.--U. S. 1,799,047.

Fabrics are rendered moth-, mildew-, mold- and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and a solution of 66 pounds of thorium acetate in 250 gallons of water.--U. S. 1,921,926.

THYMOL

Thymol is mentioned as a well known moth repellent.--U. S. 1,610,167.

Clothing treated with an emulsion of thymol in soap solution will protect the wearer from the stings of gnats.--Ger. 577,760.

The condensation product of thymol with triphenylphosphine oxide is useful for mothproofing wool.--Brit. 326,137; Ger. 521,205.

THYMOL, CONDENSATION PRODUCT OF, WITH 5-ISATINSULFONIC ACID

The condensation product of thymol with 5-isatinsulfonic acid and derivatives is a mothproofing agent.--Brit. 424,967; 424,972; Fr. 43,866; 759,662; Ger. 641,625; Swiss 162,058; 169,549; U. S. 2,070,350; 2,070,351.

THYMOL, CHLORO-

The condensation product of chlorothymol with triphenylphosphine oxide is used to mothproof wool.--Ger. 521,205.

THYMOL, 4-CHLORO-

The condensation product of 4-chlorothymol with triphenylphosphine oxide is useful for mothproofing wool.-Brit. 326,137.

THYMOL, ISODECYL-

Fr. 802,508.

THYMOL, ISODECYL-, ETHERS AND ESTERS OF

Brit. 495,761; Fr. 48,395; 1st addition to 802,508.

THYMOLSULFONEPHTHALEIN

Fabrics treated with thymol blue were badly damaged by clothes moth larvae.-Minaeff (22).

TIN ACETATE

Fabrics are rendered moth-, mildew-, mold- and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and a solution of 66 pounds of tin acetate in 250 gallons of water.-U. S. 1,921,926.

TIN CHLORIDE

The reaction product of tin chloride and ether is used to fumigate verminous clothing.-Brit. 426,398.

TIN COMPOUNDS, TRIETHYL-----FLUORIDE

A solution of 2 percent tin-triethylfluoride in a mixture of benzene and alcohol is sprayed on fur and dried.-Brit. 303,092; U. S. 1,744,633.

TIN SALTS

Ger. 374,849.

Organic derivatives of tetravalent tin, in which the tin is directly combined with carbon are used for mothproofing goods. Suitable radicals are methyl, ethyl, benzyl, phenyl, tolyl, naphthyl, bromophenyl, and dimethylaminophenyl. For example, wool is treated with a 3 percent solution of tin tetraphenyl in benzine.-Dutch 20,570; Brit. 303,092; Ger. 485,646; U. S. 1,744,633.

TITANIC ACID

Woolen rugs may be protected from attack by carpet beetles by spraying or dipping with a 5 percent solution of titanium abietate. Other salts such as the ricinoleate, resinate, stearate, oleate, linoleate, and tungate may be used.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

Titanium fluoride is one of the materials claimed in Brit. 173,536; 313,043; Fr. 518,821; Ger. 347,722; Swed. 59,841; U. S. 1,682,975 for mothproofing wool. Double fluorides of titanium, for example ammonium double fluoride, are also claimed.

Titanium sodium fluoride is an ingredient of the mothproofing solution described in U. S. 1,885,292.

The diazonium salts of titanic dihydrohexafluoride are claimed in U. S. 1,825,729.

TITANIUM CHLORIDE

Used to form addition compounds with methyl formate and other organic compounds; which addition compounds are decomposed by water and give off toxic vapors used to fumigate verminous clothing.-Brit. 426,398.

TOBACCO

Flannel dusted with powdered tobacco leaves containing 4.56 percent nicotine remained free from moth infestation in a single cage test; untreated flannel, under the same conditions became infested with 12 larvae. Since the average tobacco powder found on the market contains a great deal less than 4 percent of nicotine, this substance should not be depended upon for protection of clothing against moth attack.--Scott, Abbott and Dudley (38).

Tobacco leaves are a clothes moth preventive.--Packard (27).

Tobacco leaves are worthless for mothproofing.--White, Fulton, and Cranor (42).

Tobacco extracts containing nicotine and tobacco powder when used at reasonable strengths are worthless for clothes moth control.--Back (5).

Burning tobacco is ineffective in killing adult moths (Tincola biselliella) placed in a small closed tumbler. So-called repellents, of which tobacco is one do not repel or harm the moth in any stage.--Benedict (10).

Pulp from disintegrated cane is mixed with tobacco juice, tobacco dust or pulped tobacco stems and made into paper board for the protection of woolen and fur articles from moths and other insects.--U. S. 88,519.

alpha-TOLUAMIDE, 5-CHLORO-N-DECYL-2-HYDROXY-

Fr. 48,395, addition to 802,508.

alpha-TOLUAMIDE, 5-CHLORO-N-HEXDECYL-2-HYDROXY-

Brit. 497,214.

alpha-TOLUANILIDE, THIO-

Brit. 340,319; Fr. 39,013.

TOLUENE

A suitable solvent for:

Aryloxy alkylols.-U. S. 2,134,001.

Boron trifluoride reaction products with organic materials.-

Ger. 502,600.

Monophenyl di(orthoxenyl) phosphate.-U. S. 2,128,189.

TOLUENE, alpha-CHLORO-

Benzyl chloride and chlorobenzyl chlorides are suitable aralkyl compounds to condense with phenolsulfonic acids to form mothproofing products.-Brit. 334,886.

The condensation product of benzyl chloride with p-chlorophenol is used for mothproofing wool.-Ger. 542,069.

The reaction product of 1 mol of benzyl chloride and 1 mol of monophenylselenourea is used for mothproofing textiles.-Aust. 123,423; Ger. 524,590.

Thiuronium salts for mothproofing wool are obtained by the reaction of 1 mol of benzyl chloride with 1 mol of either phenylthiourea or tolylthiourea.-Brit. 346,039; Ger. 522,824.

The product of the reaction of 1 mol of benzyl chloride and 1 mol of phenylselenomercaptan is used for mothproofing wool.-Fr. 700,870.

TOLUENE, alpha,alpha-BIS(p-CHLOROPHENYLSULFONYL)-

TOLUENE, alpha,alpha-BIS(2,5-DICHLOROPHENYLSULFONYL)-

Brit. 484,448.

TOLUENE, alpha,2-DICHLORO-

TOLUENE, alpha,4-DICHLORO-

Condensed with p-halogenated phenols for mothproofing wool.-
Ger. 542,069.

TOLUENE, alpha,2,3,4-TETRACHLORO-

TOLUENE, alpha,2,4,5-TETRACHLORO-

A mixture of 2,3,4- and 2,4,5-trichlorobenzylchlorides is condensed with beta-naphthol and subsequently sulfonated to form a mothproofing product.-Brit. 334,886.

TOLUENE, alpha,2,4,5-TETRACHLORO-BROMINATED, CONDENSATION PRODUCT OF, WITH p-CHLOROPHENOL

Ger. 544,293.

TOLUENE, alpha,alpha,2,6-TETRACHLORO-

Products formed by condensing 2,6-dichlorobenzal chloride with 2,4-dichlorophenol or p-chlorophenol are useful for mothproofing purposes.-Brit. 337,832.

TOLUENE, TETRACHLORO-alpha-CHLORO-

Condensed with p-chlorophenol and then sulfonated to form mothproofing compounds.-Brit. 334,886; Ger. 534,338.

TOLUENE, alpha,x,x,x-TETRACHLORO-, SULFONATED CONDENSATION PRODUCT OF, WITH 2-NAPHTHOL.

U. S. 1,910,938.

TOLUENE, alpha,2,6-TRICHLORO-

Condensed with 2,4-dichlorophenol and then sulfonated to form a mothproofing product.-Brit. 334,886; Ger. 534,338.

Reacted with phenylthiourea or tolylthiourea to make thiuronium salts for mothproofing wool.-Brit. 346,039; Ger. 522,824.

TOLUENE, alpha,3,4-TRICHLORO-

Wool yarn is treated for one hour in a bath of 1:50 with 1.5 percent of the quaternary ammonium compound from 2,2'-diethylamino-ethylether-3,3'-dimethyl-5,5',2"-trichlorotriphenylmethane and 2 mols of 3,4-dichlorobenzyl chloride at a temperature of 90-95° C. and in the presence of sodium sulfate.-Brit. 483,368.

TOLUENE, alpha,alpha,2-TRICHLORO-

TOLUENE, alpha,alpha,4-TRICHLORO-

Condensed with p-chlorophenol to form products useful for mothproofing wool.-Brit. 337,832.

TOLUENE, TRICHLORO-alpha-CHLORO-

The mixture of trichlorobenzylchlorides obtained by chlorinating technical trichlorotoluene is condensed with p-chlorophenol to form a product useful for mothproofing wool.-Ger. 542,069.

The sulfonated condensation product of trichlorobenzyl chloride with 2-naphthol is used to mothproof wool.-Ger. 534,338.

TOLUENE, alpha,alpha,alpha,-TRIFLUORO-

U. S. 1,955,891.

2,4-TOLUENEDISULFONANILIDE, 4',4"-DICHLORO-6-HYDROXY-

2,6-TOLUENEDISULFONANILIDE, 4',4"-DICHLORO-4-HYDROXY-

Brit. 324,962; Fr. 686,721; Ger. 506,988; U. S. 1,962,276.

2,4-TOLUENEDISULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-3,5-DICHLORO-PHENYL)-, SODIUM SALT

Fr. 758,192.

TOLUENESULFONAMIDE, CHLORO-N-METHYL-

Used with phosphoric acid esters.-U. S. 1,955,207.

p-TOLUENESULFONAMIDE, N,N-DICHLORO-

Ger. 419,464.

TOLUENESULFONIC ACID, alpha-CHLORO-

Condensation products of sulfobenzyl chloride with p-chlorophenol are used for mothproofing wool.-Ger. 542,069.

TOLUENESULFONIC ACID, DIHYDROXYMETHYLBENZYL-

Ger. 541,629.

TOLUENESULFONIC ACID, HEXACHLORODIHYDROXY-alpha,alpha-DIPHENYL-

Fr. 39,337.

TOLUENESULFONIC ACID, PENTACHLORODIHYDROXYDIPHENYL-

A process of manufacturing this compound is described in Brit. 333,561. It is useful for protecting wool and furs against moths.-Ger. 513,387.

TOLUENESULFONIC ACID, PENTACHLORODIHYDROXY-alpha,alpha-DIPHENYL-

A method of preparation is described for this compound.-Ger. 539,182.

TOLUENESULFONIC ACID, PENTACHLOROHYDROXYPHENYL-

TOLUENESULFONIC ACID, PENTACHLOROHYDROXY-alpha-PHENYL-

U. S. 1,910,938.

TOLUENESULFONIC ACID, TETRACHLORODIHYDROXYPHENYL-

Ger. 541,629.

TOLUENESULFONIC ACID, TRICHLORODIHYDROXY-alpha,alpha-DIPHENYL-

Ger. 539,182.

Wool is mothproofed by treating 100 kg. with 1 to 5 kg. of this compound according to the procedure of dyeing.-Fr. 39,340, 5th addition to 651,646.

TOLUENESULFONIC ACID, alpha,alpha-(TRICHLORODIHYDROXYDIPHENYL)-

A process of manufacturing this is described in Brit. 333,561.

TOLUENESULFONIC ACID, alpha-(TRICHLORODIHYDROXYPHENYL)-

Ger. 541,629.

m-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-CHLOROBENZYL MERCAPTO)-

Swiss 196,141.

m-TOLUENESULFONIC ACID, alpha,alpha-BIS(4-CHLOROBENZYL MERCAPTO)-

Swiss 196,142.

m-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-2-HYDROXYPHENYL)-

Hung. 96,776.

m-TOLUENESULFONIC ACID, alpha,alpha-BIS(2,4,6-TRICHLOROBENZYL MERCAPTO)-

Swiss 196,148.

m-TOLUENESULFONIC ACID, 2-BUTOXY-alpha-(2-BUTOXY-3,5-DICHLOROPHENYL)-
6-CHLORO-

Ger. 595,106.

m-TOLUENESULFONIC ACID, 6-CHLORO-alpha,alpha-BIS(2,4,6-TRICHLORO-3-
HYDROXYPHENYL)-

Ger. 548,822.

m-TOLUENESULFONIC ACID, 5-CHLORO-alpha-(3,4,5-TRICHLOROPHENYL)-2-
HYDROXY-, SODIUM SALT

Brit. 453,053.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-ACETOXY-3,5-DICHLOROPHENYL)-

Brit. 483,368.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-ALLOXY-3,5-DICHLOROPHENYL)-,
SODIUM, POTASSIUM, OR AMMONIUM SALT

Fr. 758,192; Ger. 595,106; U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BENZOXY-5-CHLOROPHENYL)-

Ger. 618,033.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BENZOXY-3,5-DICHLOROPHENYL)-

Brit. 422,923; Ger. 604,980.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BENZOXY-3,5-DICHLOROPHENYL)-,
SODIUM-SALT

Fr. 758,192.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(BENZOXY-3,5-DICHLOROPHENYL)-4-
CHLORO-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(BENZOXY-3,5-DICHLOROPHENYL)-5-
CHLORO-, SODIUM, POTASSIUM, OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-BROMO-2-HYDROXYPHENYL)-

Ger. 503,256; Swiss 134,012.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(4-BROMOPHENYLMERCAPTO)-

Swiss 196,151.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-5-CHLORO-m-TOLYL)-
4-CHLORO-, SODIUM, POTASSIUM OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-5-CHLORO-m-TOLYL)-5-
CHLORO-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-3,5-DICHLOROPHENYL)-

Ger. 604,980.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-3,5-DICHLOROPHENYL)-,
SODIUM, POTASSIUM, OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-n-BUTOXY-3,5-DICHLOROPHENYL)-

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-n-BUTOXY-3,5-DICHLOROPHENYL)-
4-CHLORO-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-3,5-DICHLOROPHENYL)-
4-CHLORO-, SODIUM, POTASSIUM OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-3,5-DICHLOROPHENYL)-
5-CHLORO-

Ger. 604,980.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-BUTOXY-3,5-DICHLOROPHENYL)-
5-CHLORO-, SODIUM, POTASSIUM, OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-n-BUTOXY-3,5-DICHLOROPHENYL)-
5-CHLORO-

Brit. 422,923; U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-o-ANISYL)-

Ger. 618,033.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-CHLOROBENZYL MERCAPTO)-

Swiss 196,140.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(4-CHLOROBENZYL MERCAPTO)-

Swiss 193,611.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(CHLOROXYDROXYPHENYL)-

Ger. 503,256.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-CHLORO-6-HYDROXYPHENYL)-

Aust. 124,284.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-2-HYDROXYPHENYL)-

Ger. 503,256; Hung. 96,776; Swiss 134,013; U. S. 1,707,181.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-CHLORO-6-HYDROXY-m-TOLYL)-

Ger. 506,989.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-2-HYDROXY-m-TOLYL)-

Ger. 503,256; Swiss 134,012.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-2-HYDROXY-p-TOLYL)-

Swiss 134,012.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-6-HYDROXY-m-TOLYL)-

Aust. 124,284; Fr. 37,924; Ger. 506,989; U. S. 1,910,488.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-2-METHOXYPHENYL)-

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-2-METHOXY-m-TOLYL)-

Fr. 758,192.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2-CHLOROPHENYLMERCAPTO)-

Swiss 196,144.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3-CHLOROPHENYLMERCAPTO)-

Swiss 196,145.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(4-CHLOROPHENYLMERCAPTO)-

Swiss 196,143.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(p-CYCLOHEXOXYPHENYL)-

Ger. 618,033.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-o-ANISYL)-

Ger. 604,980; U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-p-ANISYL)-

Brit. 422,923; Ger. 604,980.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2,6-DICHLOROBENZYLMERCAPTO)-

Swiss 196,149.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,4-DICHLOROBENZYLMERCAPTO)-

Swiss 196,150.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-CYCLOHEXOXYPHENYL)-,
SODIUM, POTASSIUM OR AMMONIUM SALT

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLOROPHENYL-2-CYCLOHEXOXY)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-ETHOXYPHENYL)-
SODIUM, POTASSIUM, OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-HYDROXYPHENYL)-

Fr. 39,328; 2nd addition to 651,646; Ger. 503,256; 537,768; 539,182;
Swiss 134,012; U. S. 1,948,894; 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-4-HYDROXYPHENYL)-,
SODIUM SALT

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-ISOAMOXYPHENYL)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-ISOAMOXYPHENYL)-
SODIUM, POTASSIUM OR AMMONIUM SALT

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-ISOBUTOXYPHENYL)-

Brit. 422,923; Ger. 604,980; U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-ISOBUTOXYPHENYL)-,
SODIUM, POTASSIUM OR AMMONIUM SALT

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-ISOPROPOXYPHENYL)-

Ger. 604,980; U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-ISOPROPOXYPHENYL)-,
SODIUM SALT

Fr. 758,192.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-beta-METHOXYPHENETYL)-,
SODIUM SALT

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-METHOXYPHENYL)-

Ger. 595,106; Fr. 758,192.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-o-PHENETYL)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(2,4-DICHLOROPHENYLMERCAPTO)-

Swiss 196,147.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,4-DICHLOROPHENYLMERCAPTO)-

Swiss 196,146.

o-TOLUENESULFONIC ACID, 3,5-BIS(3,4-DICHLOROPHENYLSULFONAMIDO)-

U. S. 1,962,276.

o-TOLUENESULFONIC ACID, 4,6-BIS(3,4-DICHLOROPHENYLSULFONAMIDO)-

Brit. 324,962; Fr. 686,721.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-PROPOXYPHENYL)-,
SODIUM, POTASSIUM OR AMMONIUM SALT

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-n-PROPOXYPHENYL)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(4-FLUOROPHENYLMERCAPTO)-

Swiss 196,152.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(HYDROXYPHENYL)-

Aust. 124,284.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(6-HYDROXY-m-TOLYL)-

Fr. 37,924; Ger. 506,939; U. S. 1,910,488.

o-TOLUENESULFONIC ACID, alpha,alpha-BIS(METHOXYPHENYL)-

Fr. 758,192.

o-TOLUENESULFONIC ACID, 4-BROMO-alpha,alpha-BIS(3,5-DICHLORO-o-ANISYL)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, 5-BROMO-alpha,alpha-BIS(3,5-DICHLORO-2-METHOXYPHENYL)-, SODIUM, POTASSIUM OR AMMONIUM SALTS

This compound is used to combat textile pests.-Fr. 758,192;

Ger. 595,106.

o-TOLUENESULFONIC ACID, 5-CHLORO-alpha,alpha-BIS(5-CHLORO-o-ANISYL)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, 4-CHLORO-alpha,alpha-BIS(5-CHLORO-2-METHOXY-PHENYL)-, SODIUM, AND POTASSIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, 4-CHLORO-alpha,alpha-BIS(CYCLOHEXOXY-3,5-DICHLOROPHENYL)-

o-TOLUENESULFONIC ACID, 4-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-o-ANISYL)-

o-TOLUENESULFONIC ACID, 5-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-o-ANISYL)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, 5-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-CYCLO-HEXOXYPHENYL)-, SODIUM, POTASSIUM OR AMMONIUM SALT

o-TOLUENESULFONIC ACID, 5-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-ETHOXY-PHENYL)-, SODIUM, POTASSIUM OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, 4-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-HYDROXY-PHENYL)-

o-TOLUENESULFONIC ACID, 5-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-HYDROXY-PHENYL)-

Ger. 503,256.

o-TOLUENESULFONIC ACID, 4-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-METHOXY-PHENYL)-,

Fr. 758,192; Ger. 595,106.

o-TOLUENESULFONIC ACID, 4-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-METHOXY-PHENYL)-, SODIUM SALT

o-TOLUENESULFONIC ACID, 5-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-METHOXY-PHENYL)-

Fr. 758,192.

o-TOLUENESULFONIC ACID, 5-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-2-METHOXY-PHENYL)-, SODIUM SALT

Brit. 422,923; Ger. 595,106.

o-TOLUENESULFONIC ACID, 4-CHLORO-alpha,alpha-BIS(3,5-DICHLORO-o-PHENETYL)-

U. S. 2,053,610.

o-TOLUENESULFONIC ACID, 3-CHLORO-alpha,alpha-BIS(2,4,6-TRICHLORO-3-HYDROXYPHENYL)-

Brit. 383,493; U. S. 1,971,436.

o-TOLUENESULFONIC ACID, alpha-CHLOROHYDROXYPHENYL-alpha-DICHLOROHYDROXY-PHENYL-

Ger. 513,387.

o-TOLUENESULFONIC ACID, alpha-(5-CHLORO-2-HYDROXYPHENYL)-alpha-(3,5-DICHLORO-2-HYDROXYPHENYL)-

U. S. 1,948,894.

o-TOLUENESULFONIC ACID, alpha-(3,4-DICHLORO-2-METHOXYPHENYL)-alpha-(3,5-DICHLORO-2-METHOXYPHENYL)-

Brit. 422,923.

o-TOLUENESULFONIC ACID, alpha-(2,4,6-TRICHLORO-3-HYDROXYPHENYL)-alpha-HYDROXY-

The hydrol anhydride obtained by the condensation of equimolecular quantities of 2,4,6-trichlorophenol and benzaldehyde-o-sulfonic acid in 11 percent oleum possesses mothproofing properties.-Brit. 383,493;

U. S. 1,971,436.

p-TOLUENESULFONIC ACID, SODIUM SALT

Material is mothproofed with a solution of sodium salt of paratoluene-sulfonic acid and hydrofluoric acid.-Brit. 295,742.

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-2-METHOXY-m-TOLYL)-,
SODIUM, POTASSIUM, OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-CHLORO-3-METHYL-o-ANISYL)-

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-o-ANISYL)-

U. S. 2,053,610.

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-HYDROXYPHENYL)-

Ger. 503,256.

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(4,6-DICHLORO-3-HYDROXY-o-TOLYL)-

Brit. 383,493; Ger. 548,222; U. S. 1,971,436.

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(3,5-DICHLORO-2-METHOXYPHENYL)-,
SODIUM, POTASSIUM OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(3-HYDROXY-2,4,6-TRICHLOROPHENYL)-

p-TOLUENESULFONIC ACID, alpha,alpha-BIS(5-HYDROXY-2,4,6-TRICHLOROTOLYL)-

Brit. 383,493; Ger. 548,822; U. S. 1,971,436.

p-TOLUENESULFONIC ACID, alpha-(2-BUTOXY-3,5-BUTOXYPHENYL)-alpha-(3-
BUTOXY-2,4,6-TRICHLOROPHENYL)-, SODIUM, POTASSIUM OR AMMONIUM SALTS

Fr. 758,192; Ger. 595,106.

p-TOLUENESULFONIC ACID, alpha-(2-BUTOXY-3,5-DICHLOROPHENYL)-alpha-(3-
BUTOXY-2,4,5-TRICHLOROPHENYL)-

Fr. 758,192.

p-TOLUENESULFONIC ACID, alpha-(2-BUTOXY-3,5-DICHLOROPHENYL)-alpha-(3-
BUTOXY-2,4,6-TRICHLOROPHENYL)-

U. S. 2,053,610.

p-TOLUENESULFONIC ACID, alpha-CHLORO-

Benzyl chloride p-sulfonic acid is a suitable aralkyl compound to
condense with phenol sulfonic acids to form mothproofing products.-

Brit. 334,886.

p-TOLUENESULFONIC ACID, alpha-(5-CHLORO-2-HYDROXYPHENYL)-

U. S. 1,880,566.

p-TOLUENESULFONIC ACID, alpha-(5-CHLORO-2-HYDROXYPHENYL)-alpha-(2,4,6-TRICHLORO-3-HYDROXYPHENYL)-

Brit. 383,493; Ger. 548,822; U. S. 1,971,436.

p-TOLUENESULFONIC ACID, alpha,alpha-DI-p-ANISYL-

Ger. 618,033.

p-TOLUENESULFONIC ACID, alpha-(3,5-DICHLORO-2-HYDROXYPHENYL)-alpha-(2,4,6-TRICHLORO-3-HYDROXYPHENYL)-

Brit. 383,493; Ger. 548,822; U. S. 1,971,436.

p-TOLUENESULFONIC ACID, alpha-(DICHLORO-3-HYDROXYTOLYL)-alpha-HYDROXY-

The hydrol obtained by the condensation of one mole of 4,6-dichloro-2-methylphenol and one mole benzaldehyde-p-sulfonic acid is efficacious in combating moths and other textile pests.-U. S. 1,971,436.

p-TOLUENESULFONIC ACID, alpha-(2,4,6-TRIBROMO-3-HYDROXYPHENYL)-alpha-HYDROXY-

Mothproofing properties are shown by the hydrol obtained by the condensation of equimolecular quantities of 2,4,6-tribromophenol and benzaldehyde-p-sulfonic acid.-Brit. 383,493.

p-TOLUENESULFONIC ACID, alpha-(2,4,6-TRICHLORO-3-HYDROXYPHENYL)-alpha-HYDROXY-

p-TOLUENESULFONIC ACID, alpha-(2,4,6-TRICHLORO-5-HYDROXY-m-TOLYL)-alpha-HYDROXY-

Mothproofing properties are shown by the hydrol prepared by the condensation of equimolecular quantities of 2,4,6-trichlorophenol or 2,4,6-trichloro-m-cresol and benzaldehyde-p-sulfonic acid.-Brit. 383,493; U. S. 1,971,436.

alpha-TOLUENESULFONIC ACID

Condensed with phenol sulfonic acids to form mothproofing products.-
Brit. 334,886.

alpha-TOLUENESULFONIC ACID, DICHLORO-

alpha-TOLUENESULFONIC ACID, 2,4-DICHLORO-

The sulfonated condensation product of dichlorobenzyl-omega-sulfonic acid and 2-naphthol is used for mothproofing wool.-Brit. 334,886; Ger. 534,338.

alpha-TOLUENESULFONIC ACID, DICHLORO-, CONDENSATION PRODUCT OF, WITH 2-NAPHTHOL

U. S. 1,910,938.

o-TOLUENESULFONIC ACID HYDROFLUORIDE, POTASSIUM SALT

A solution of the addition product of 1 mole of potassium toluene-ortho-sulfonate with 1 mole of hydrofluoric acid is used for mothproofing goods.-Ger. 500,333.

p-TOLUENESULFONIC ACID HYDROFLUORIDE, SODIUM SALT

Ger. 500,333.

p-TOLUENESULFONYL CHLORIDE

Wool is mothproofed by treating it with a solution of p-toluene-sulfochloride, 1,5-naphthalenedisulfochloride, or a mixture of the two in a solvent such as trichloroethylene, trichlorobenzene, or a mixture of the two.-Ger. 449,126.

p-TOLUENESULFONYL FLUORIDE

Ger. 450,418.

o-TOLUENETHIOL, 3-CHLORO-

alpha-TOLUENETHIOL

This is condensed with benzaldehyde-ortho-sulfonic acid or other aromatic aldehyde- or ketone-sulfonic acid to form water-soluble thio-acetal sulfonic acids useful for mothproofing textiles.-Brit. 492,938.

alpha-TOLUENETHIOL, 2-CHLORO-

Brit. 492,938.

The condensation product of this with o-chloro-benzaldehyde is a mothproofing agent.-Brit. 491,182; Fr. 829,834.

alpha-TOLUENETHIOL, 4-CHLORO-

Condensed with benzaldehyde-ortho-sulfonic acid to form a mothproofing agent.-Swiss 193,611.

alpha-TOLUENETHIOL, DICHLORO-

The condensation product of this with cyclohexanone is a mothproofing agent.-Brit. 491,182; Fr. 829,834.

TOLUIC ACIDS, SULFOHYDROXY-

Effective in mothproofing wool when used in a boiling dye bath.-Brit. 299,055.

p-TOLUIC ACID, 2-NITRO-

Wool (100 parts) is mothproofed with 1-1/2 parts nitro-p-toluic acid, 1-1/2 parts sulfuric acid, and 10 parts Glauber's salt.-Fr. 518,821; Ger. 344,266.

alpha-TOLUIC ACID, 4-CHLORO-m-TOLYL ESTER

Brit. 453,053.

alpha-TOLUIC ACID, 5-CHLORO-2-HYDROXY-, OCTYL ESTER

Brit. 497,214; Ger. 48,395; 1st addition to 802,508.

TRIAZENE, 1,3-DIPHENYL-

Brit. 238,287; Fr. 581,037; Ger. 402,341; U. S. 1,562,510.

TRI-n-BUTYLAMINE FLUOSILICATE

Used as a wool-preservative, disinfectant, and antiseptic.-

Brit. 391,141; U. S. 1,917,463.

TRIBUTYL PHOSPHATE

The protecting solution consists of perchlorethylene containing a mixture of 1 part of 3,4-dichloro-benzenesulfoleic amid and 1 part of diethylglycol phosphate and 1 part of tributyl phosphate. Goods treated with the mixtures become protected against textile pests.-Brit. 407,356; Fr. 42,266; U. S. 1,955,207.

TRICRESOL

Blocks of gypsum are impregnated with tricresol and used against clothes moths.-Ger. 409,510.

TRIETHANOLAMINE FLUOSILICATE

Triethanolamine fluosilicate is used as a wool-preservative, disinfectant, and antiseptic.-U. S. 1,917,463.

Triethanolamine fluosilicate is dissolved in alcohol or in a mixture of alcohol and chloroform to make a mothproofing solution.-Can. 381,574; U. S. 2,075,359.

A 3-percent aqueous solution gives good results.-U. S. 2,176,894.

TRIETHANOLAMINE OLEATE

Used to emulsify aluminum naphthenate in water.-U. S. 2,078,458.

TRIETHYLAMINE, CHLORO-

Wool is mothproofed by boiling with 1 percent of the monoquaternary ammonium compound from 1 mol of 2,4'-diaminodiphenyl, 2 mols of monochlorotriethylamine and 1 mol of 3,4-dichloro-benzylchloride.-Brit. 483,368.

TRIETHYL PHOSPHATE

TRIIISOAMYL PHOSPHATE

Mothproofing solutions are prepared by mixing an aryl sulfonamide with triethyl or tri-isoamyl phosphate and diluting the mixture with benzine, carbon tetrachloride or trichlorethylene.-Brit. 407,356; U. S. 1,955,207.

TRIMETHYLENEBIMINIUM SALTS, 1-DIALKYL-3-HYDROXY-

Fr. 800,582; U. S. 2,202,169.

TRIMETHYL PHOSPHATE

Brit. 407,356.

TRIOXYMETHYLENE

A mixture of $\frac{2}{3}$ naphthalene and $\frac{1}{3}$ trioxymethylene is vaporized for destroying moths.-Ger. 363,852.

TRIPOTASSIUM DIFLUORODISULFATE

Brit. 295,742.

A 2-percent solution of tripotassium difluorodisulfate is used to mothproof goods in 10 times their weight of water.-Ger. 500,333.

TRITOLYL PHOSPHATE

The protecting solution consists of carbon tetrachloride containing a mixture of 1 part of 3,4-dichlorobenzenesulfobutylamide and 1.5 parts of tricresylphosphate.-Brit. 407,356; Fr. 42,266; U. S. 1,955,207.

TUNG OIL, OXIDIZED

The acids in blown tung oil are used to form salts with rare earth elements for use in mothproofing compositions.-Brit. 247,242; U. S. 1,739,840.

TUNGSTIC ACID

100 parts of wool are heated to 100° C. for an hour with a solution of 3 parts of colloidal tungstic acid in 3,000 parts of water, together with 20 parts of Glauber's salt and 5 parts of sulfuric acid. After being treated the wool is rinsed and dried.-Brit. 173,536; Fr. 518,821; Ger. 347,721.

Tungstic acid in combination with Glauber's salt and sulfuric acid in water was ineffective as a mothproofing agent.-Jackson and Wassell (18).

TURKEY RED OIL

A mothproofing composition contains 0.6 percent sodium fluosilicate, 0.3 percent alum, 0.02 percent gelatin, and 0.02 percent Turkey red oil.-U. S. 1,634,793.

Used to make aqueous emulsions of fluorocoumarin (Brit. 421,885) and a solution of chlorinated naphthalene in hydrogenated naphthalene (U. S. 2,136,020).

TURPENTINE

Sheets of paper sprinkled with spirits of turpentine should be placed among clothes when they are laid aside for the summer.-Packard (27).

Formaldehyde in turpentine is employed for preserving leather from insect attack.-Brit. 221,599.

Turpentine is mentioned as a clothes moth repellent by Sachs (35), and in Brit. 230,203; and U. S. 1,610,167.

Wood is made repellent to clothes moths ("Mottenholz") by impregnating it with a mixture of 35 percent turpentine, 20 percent varnish, 35 percent camphor, and 15 percent beta-naphthol (sic).-Ger. 481,679.

TURPENTINE SUBSTITUTE

A solvent for thorium oleate.-Brit. 247,242.

URANIC ACID

Brit. 173,536; Ger. 347,721; Fr. 518,821.

URANIUM SALTS

Uranium salts of the higher organic acids are used for mothproofing; specifically the ricinoleate, resinate, stearate, oleate, linoleate, and tungate.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

Water soluble salts of uranium such as the acetate or chloride are used to precipitate casein upon woollens for mothproofing purposes.-U. S. 1,688,717.

Textiles are made waterproof, mothproof, and mildewproof by immersing them in an emulsion of petrolatum and then in a solution of a uranium salt.-U. S. 1,799,047.

UREA

Ineffective in 2 percent solution.-Minaeff and Wright (23).

UREA, SULFONATED CONDENSATION PRODUCT OF, WITH CHLOROPHENOL AND FORMALDEHYDE-

U. S. 1,906,890.

UREA, SULFONATED CONDENSATION PRODUCT OF, WITH PHENOL AND FORMALDEHYDE

Brit. 419,179; Fr. 766,945.

UREA, 1-ACETYL-3-ALLYL-2-THIO-

This compound dissolved in ethyl alcohol is used for mothproofing wool.--Aust. 123,881; Brit. 337,823; Fr. 39,013; Ger. 546,097.

UREA, 1-ACETYL-3-p-CHLOROPHENOXY-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, 1-ACETYL-3-PHENYL-2-THIO-

Goods so treated that 1 to 2 percent of this substance remains on them are rendered mothproof.--Aust. 123,881.

Brit. 326,567; 337,823; Fr. 685,123; Ger. 534,676.

UREA, 1-ACETYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, ALLYL-

This compound in 2 percent solution has little mothproofing value.--Minaeff and Wright (23).

UREA, ALLYLTHIO-

U. S. 1,748,580.

Allylthiourea in 2 percent solution has good mothproofing value.--Minaeff and Wright (23).

UREA, 1-ALLYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

Wool is mothproofed in an aqueous acetone solution of an asymmetrical thiourea derivative, such as allylthiourea.--Ger. 515,632.

UREA, 1-BENZOYL-3-PHENYL-2-THIO-

One hundred grams of wool are wetted with a 10 percent solution of phenylbenzoylthiourea in carbon tetrachloride or alcohol, after which the wool is pressed off until it still contains 10 to 30 percent of the impregnating solution and then dried. After this treatment the wool is permanently protected against attack by moths.-

U. S. 1,975,408.

Brit. 326,567; Fr. 685,123.

UREA, 1-BENZOYL-2-THIO-

UREA, 1-BENZYL-2-THIO-

Brit. 326,367; Fr. 685,123; Ger. 534,676.

UREA, 1-CAPROYL-3-CYCLOHEXYL-2-THIO-

U. S. 1,975,408.

UREA, 1-CAPROYL-3-PHENYL-2-THIO-

Applied in benzene solution.-U. S. 1,975,408.

Material is treated with a solution of phenylcapronylthiourea in such a manner that after centrifuging and drying 1 percent of the substance remains on the material, which is then permanently protected against attack by moths.-Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, 1-CHLOROTOLYL-2-THIO-

UREA, 1-CYCLOHEXYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, 1-DICHLOROBENZOYL-3-PHENYL-2-THIO-

Brit. 326,567; Fr. 685,123; U. S. 1,975,408.

UREA, 1-DICHLOROBENZOYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, DI-o-TOLYLTHIO-

Di-o-tolylthiourea in 2 percent solution has doubtful mothproofing value.--Minaeff and Wright (23).

UREA, 1-HEXAHYDROBENZOYL-2-THIO-

UREA, 1-METHOXY-3-PHENYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, 1-OLEYL-3-PHENYL-2-THIO-

Brit. 326,567; Fr. 685,123; U. S. 1,975,408.

UREA, 1-OLEYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, PHENYL-

Phenylurea in 2 percent solution has little mothproofing value.--Minaeff and Wright (23).

UREA, 1-PHENYL-2-SELENO-

The reaction product of 1 mole of benzyl chloride upon 1 mole of monophenylselenourea is used for mothproofing textiles.--Aust. 123,423; Fr. 700,870; Ger. 524,590.

UREA, PHENYLTHIO-

See under Urea, thio.

UREA, 1-PHENYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

Used to prepare thiuronium salts for mothproofing wool.--Brit. 346,039; Ger. 522,824.

Wool is mothproofed in an aqueous acetone solution of an asymmetrical thiourea derivative, such as phenylthiourea.--Ger. 515,632.

UREA, 1-PHENYL-2-THIO-3-VALERYL-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, PHENYLVALERYLTHIO-

Goods treated with a solution of asymmetric phenylvalerylthiourea in an organic solvent so that 1 percent of the substance remains after drying are rendered mothproof.--Aust. 123,881; U. S. 1,975,408.

UREA, 1-STEARYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, THIO-

A 2 percent solution of thiourea or phenylthiourea in acetone, water or other solvents, to which 0.3 percent of sulfonated castor oil may be added to facilitate wetting, is used for mothproofing fabrics.--Brit. 301,421; U. S. 1,748,579; 1,748,580.

Thiourea and phenylthiourea in 2 percent solution have good mothproofing value.--Minaeff and Wright (23).

Goods treated with a solution of thiocarbamide were not protected against fabric pests.--Fr. 664,151; Ger. 515,632.

Thioureas which contain on one nitrogen atom an alkyl, cycloalkyl, aralkyl, or aryl residue and on the same nitrogen atom or on the sulfur an acid residue are employed for combating moths.--Aust. 123,881; Ger. 546,097.

Material is mothproofed by treatment with a solution containing a thiourea in which at least one of the amine groups contains no substitute for hydrogen. The solution also contains a wetting agent, e.g., a sulfonated compound.--Can. 292,391; Fr. 664,151; Ger. 515,632.

Thiourea derivatives are claimed in Brit. 326,567; 337,823; Fr. 685,123; 39,013; Ger. 534,676.

Thiourea is condensed with cyclic derivatives of the pyrimidine series to make products useful for mothproofing.-Ger. 547,057.

UREA, 2-THIO-, OXIDATION PRODUCTS OF

A repellent to carpet beetle larvae.-U. S. 2,197,624.

UREA, 2-THIO-1-VALERYL-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

UREA, 1-o-TOLYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676. o-Tolylthiourea is specified in Ger. 515,632; U. S. 1,748,580.

Thiuronium salts for mothproofing wool are obtained by the reaction of 1 mole of tolylthiourea with 1 mole of either ethylene bromide, 2,6-dichlorobenzyl chloride, or benzyl chloride.-Brit. 346,029; Ger. 522,824.

o-Tolylthiourea in 2 percent solution has good mothproofing value.-Minaeff and Wright (23).

UREA, 1-TRICHLOROPHENYL-2-THIO-

Brit. 326,567; Fr. 685,123; Ger. 534,676.

VARNISH

An ingredient of a clothes moth repellent.-Ger. 481,679.

VEGETABLE OIL

Used as a softening agent in an adhesive mothproofing composition.-Brit. 463,725.

VICTORIA BLUE B

Wool dyed with Victoria blue B showed considerable resistance to clothes moth larvae and black carpet beetle larvae, but by no means could be called mothproof.-Minaeff (22).

VISCOSE

Wool is rendered mothproof by treating it with sodium cellulose xanthate and then precipitating the viscose with acid.-Ger. 576,411.

VUZINE HYDROCHLORIDE

Ineffective.-Jackson and Wassell (18).

WAX

Used as a softening agent in an adhesive mothproofing composition.-Brit. 463,725.

Used to coat a block of wood impregnated with cedar oil.-U. S. 1,479,704.

Used in combination with tar for mothproofing.-U. S. 1,591,902.

WAXES

A wax, such as carnauba wax, is an ingredient of an artificial cedar board.-Ger. 470,458.

WOOD DISTILLATES

Curled hair is mothproofed by impregnating it with a wood distillate, such as creosote or pyroligneous acid or a combination of the two, and drying so as to leave the protecting agent permanently combined therewith.-U. S. 369,739.

WOOD FLOUR

A suitable diluent for:

Aluminum fluoride.-Fr. 636,434; Ger. 469,256.

Quaternary phosphonium salts.-U. S. 1,921,364.

Zinc fluoride.-Aust. 114,458; Dutch 20,526.

m-XYLENE, CHLORO-

XYLENE, alpha,alpha'-DICHLORO-

Condensed with phenol sulfonic acids to form mothproofing products.-Brit. 334,886.

XYLENE, ISOBUTYLTRINITRO

A mothproofing composition comprises about 3 to 5 percent each of Chlorax (a commercial mixture of isomeric chlorohydroxyxylenes) and musk xylol intimately admixed with about 94 to 90 percent of an inert filler.-Brit. 389,860.

alpha,alpha'-m-XYLENEDIOL, 5-CHLORO-2-HYDROXY-, CONDENSATION PRODUCT OF, WITH p-CRESOL

alpha,alpha'-m-XYLENEDIOL, 5-CHLORO-2-HYDROXY-, CONDENSATION PRODUCT OF, WITH 1-NAPHTHOL

alpha,alpha'-m-XYLENEDIOL, 5-CHLORO-2-HYDROXY-, CONDENSATION PRODUCT OF, WITH 4-CHLORO-1-NAPHTHOL

Ger. 542,068.

2,4-XYLENOL

as-m-Xylenol is a suitable p-alkylated phenol for condensing with aromatic aldehydes.-Brit. 330,893.

3,5-XYLENOL

The condensation product of this with triphenylphosphine oxide is useful for mothproofing wool.-Brit. 326,137; Ger. 521,205.

XYLENOLS, HALOGENATED

These compounds, substituted at a carbon atom by a hexyl, octyl, decyl, dodecyl, tetradecyl, hexadecyl or octadecyl residue are used as mothproofing agents.-Brit. 474,600.

YTTRIUM SALTS

Yttrium salts of the higher organic acids are used for mothproofing; specifically: the linoleate, oleate, ricinoleate, resinate, stearate, and tungate.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

ZINC ACETATE

Fabrics are rendered moth-, mildew-, mold- and waterproof by treatment in a bath prepared by mixing a solution of 6 pounds of egg albumin in 125 gallons of water and a solution of 66 pounds of zinc acetate in 250 gallons of water.-U. S. 1,921,926.

ZINC METAARSENATE

A rot-proof tiber and termite proof product for the manufacture of building board, etc., has the following composition: fiber, 1,000 lbs., rosin size (bone dry basis) 20 lbs., zinc metaarsenate [$\text{Zn}(\text{AsO}_2)_2$] 3 lbs., water about 50,000 lbs. This pulp is thoroughly mixed and pressed out into boards. [The patent calls for zinc meta-arsenate but gives the formula for zinc meta-arsenite.]-U. S. 1,884,367.

ZINC FLUORIDE

Goods are mothproofed by rolling them for 2 hours in a drum with a mixture of 1 part zinc fluoride and 7 parts wood meal, with or without the addition of some acetic acid.-Aust. 114,458.

Zinc fluoride is a constituent of the mothproofing solutions claimed in Brit. 173,536; Fr. 518,821; Ger. 347,722; Swed. 59,841; U. S. 1,494,085; 1,515,182; 1,634,790; 1,634,791; and 1,682,975.

ZINC FLUOSILICATE

U. S. 1,634,790; 1,634,791.

ZINC FLUOSULFONATE

Used for preserving textile fabrics and other porous ~~organic~~ materials.-U. S. 1,448,276.

ZINC SULFATE

Zinc sulfate is dissolved with an excess of alkali. To this zincate solution carbolic acid is added. The solution, after dilution, is employed for the preservation of cellulosic materials from rodents, insects, etc.-Fr. 677,340.

Material to be mothproofed is treated at about 30° C. for 30 minutes with a 1 percent aqueous solution of 4 parts brucine sulfate and 1 part zinc sulfate.-Ger. 526,611.

Zinc sulfate is used as a metal mordant in combination with Strychnos alkaloids for mothproofing. For example, materials are treated in a 1 percent water solution of 4 parts brucine sulfate, 1 part saponine of quillaia, and 2 parts zinc sulfate, for 30 minutes at 80° F.-Brit. 327,009.

Wool, 100 parts by weight, is mothproofed by soaking overnight in a bath containing 3,000 parts (by weight) of water, 1 part of fluotitanic acid, 2 parts of zinc sulfate, 20 parts of sodium sulfate, and 3 parts of myrrhic acid.-Swed. 59,841.

Zinc sulfate is an ingredient of mothproofing compositions claimed in the following patents: Brit. 173,536; 235,914; 235,915; Ger. 347,849; and U. S. 1,494,085; 1,515,182; 1,634,790; 1,634,791; 1,682,975. For example, 100 parts of wool are placed overnight in a bath (3,000 parts of water) containing 1 part of titanium hydrofluoric acid, 2 parts of sulfate of zinc, 20 parts of Glauber's salt and 3 parts of formic acid. It is then rinsed and dried.

Used with brucine anilide formate.-U. S. 2,015,533.

ZINC SALTS

Zinc salts are ingredients of mothproofing solutions.-Ger. 347,849.

The zinc salts of naphthalenesulfonic acids are used in a mothproofing solution.-Brit. 313,043; U. S. 1,494,085.

Zinc salts incorporated in fiber building board render it rot-proof and termite proof.-U. S. 1,884,367.

A mothproofing composition comprises a mixture of alkaloidal salts from seeds of Lupinus with saponins of quillaia, the sodium salt of an inorganic acid other than sulfuric and a metal mordant which may be a zinc salt.-U. S. 1,885,292.

ZIRCONIUM SALTS

Zirconium salts of the higher organic acids are used for mothproofing; specifically: the ricinoleate, resinate, stearate, oleate, linoleate, and tungate.-Brit. 247,242; Fr. 603,552; U. S. 1,739,840.

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PATENTS ABSTRACTED

AUSTRIAN

99,430

114,042

114,458

118,640

123,423

123,881

124,284

BELGIAN

379,339

BRITISH

13,071 (1909)	261,241	313,771
19,688 (1912)	263,092	316,900
10,379 (1914)	274,425	316,987
160,039	285,825	321,786
173,536	295,742	324,962
221,599	298,538	325,910
230,203	299,055	326,137
235,914	301,421	326,451
235,915	303,092	326,567
236,218	310,825	327,009
238,287	312,163	330,598
247,242	313,043	330,893
253,993		

BRITISH Cont'd

330,894	403,957	495,761
333,561	407,356	497,214
333,583	407,691	498,090
333,584	413,445	500,386
334,886	413,529	502,320
335,547	419,179	503,694
337,808	421,885	
337,823	422,923	
337,832	424,967	
339,126	424,972	
340,318	426,398	
340,319	453,053	
346,039	454,458	
347,292	463,725	
349,004	467,701	
365,233	474,600	
366,090	476,843	
367,913	478,398	
368,179	483,368	
383,493	484,448	
389,860	487,804	
391,141	491,182	
396,064	491,434	
399,938	492,938	
399,952	495,639	

CANADIAN

247,378	338,896
261,810	338,897
280,549	375,599
292,391	381,574
292,416	387,255

DUTCH

20,526
20,570
25,565

FRENCH

37,924 1st addn. to 651,646	518,821	675,413
39,013 1st addn. to 685,123	545,930	677,340
39,328 2nd addn. to 651,646	581,037	681,795
39,334 3rd addn. to 651,646	603,552	685,123
39,337 4th addn. to 651,646	625,380	686,721
39,340 5th addn. to 651,646	635,973	688,418
40,647 1st addn. to 717,976	636,434	699,410
42,266 1st addn. to 686,721	646,479	700,870
43,282 1st addn. to 688,418	651,646	707,840
43,866 1st addn. to 759,662	654,712	713,082
45,639 1st addn. to 774,692	661,727	717,976
47,613 and addn. to 774,692	661,931	735,959
48,395 1st addn. to 802,508	664,151	758,192
452,478	670,674	759,662

FRENCH Cont'd

766,945	810,395
774,692	812,687
788,285	817,182
800,582	829,834
802,508	831,977
805,530	

GERMAN

258,405	402,341	481,679
272,822	409,510	485,101
304,506	411,345	485,573
330,492	416,706	485,646
344,266	419,463	488,138
346,596	419,464	488,307
346,597	421,100	490,221
346,598	430,186	500,333
347,720	442,901	501,135
347,721	449,126	502,600
347,722	450,418	503,256
347,723	460,545	504,886
347,849	468,914	506,770
353,682	469,094	506,987
357,063	469,256	506,988
363,852	470,458	506,989
377,587	480,180	507,097

GERMAN Cont'd

513,387	542,068
513,388	542,069
515,632	544,293
515,956	546,097
520,184	547,057
521,205	548,822
522,824	557,760
524,590	558,509
526,611	571,743
528,704	576,411
530,219	581,990
530,331	588,851
532,394	595,106
534,338	595,849
534,676	597,182
535,151	604,980
535,152	612,172
536,551	615,759
537,024	618,033
537,768	641,625
539,182	665,214
540,208	665,215
541,279	
541,629	
542,067	

HUNGARIAN

96,776

96,941

116,389

JAPANESE

78,953

SWEDISH

59,841

80,538

SWISS

101,949	186,764	196,152
125,139	193,611	199,985
134,012	194,375	200,667
135,166	196,140	200,669
142,372	196,141	201,548
148,330	196,142	202,161
162,058	196,143	202,162
165,030	196,144	203,301
165,031	196,145	203,302
165,032	196,146	203,303
165,377	196,147	203,304
167,697	196,148	203,305
169,549	196,149	203,306
169,550	196,150	203,590
169,551	196,151	203,591
		203,592

UNITED STATES

88,519	1,634,790	1,825,729
369,739	1,634,791	1,854,948
387,579	1,634,792	1,871,850
1,019,909	1,634,793	1,874,524
1,085,783	1,634,794	1,880,566
1,097,406	1,655,540	1,884,367
1,216,356	1,658,596	1,885,292
1,448,276	1,682,975	1,901,960
1,479,704	1,688,597	1,903,864
1,480,289	1,688,717	1,906,890
1,494,085	1,694,219	1,910,488
1,515,182	1,707,181	1,910,938
1,558,122	1,725,656	1,915,922
1,562,510	1,732,240	1,917,463
1,591,902	1,734,682	1,918,849
1,594,631	1,739,840	1,921,364
1,594,632	1,744,633	1,921,926
1,605,202	1,748,579	1,923,223
1,610,167	1,748,580	1,924,507
1,611,119	1,748,675	1,948,894
1,613,402	1,757,222	1,955,207
1,615,843	1,766,819	1,955,891
1,619,529	1,789,565	1,962,276
1,620,587	1,795,364	1,971,436
1,630,836	1,799,047	1,975,408

UNITED STATES Cont'd

1,977,412	2,126,261
1,982,358	2,127,252
2,005,797	2,127,879
2,010,443	2,128,189
2,015,533	2,129,025
2,017,159	2,130,435
2,053,610	2,134,001
2,069,179	2,136,020
2,070,350	2,139,190
2,070,351	2,145,214
2,070,352	2,148,928
2,070,353	2,150,601
2,075,359	2,157,854
2,078,458	2,163,104
2,082,188	2,176,894
2,086,046	2,184,147
2,091,075	2,184,951
2,093,778	2,197,624
2,098,204	2,200,603
2,098,942	2,202,169
2,101,587	
2,107,366	
2,114,577	
2,119,458	
2,123,572	







